THE BOSTON
Medical and Surgical
JOURNAL

Owned and Published by THE MASSACHUSETTS MEDICAL SOCIETY

OFFICIAL ORGAN OF THE NEW ENGLAND SURGICAL SOCIETY, AND OF THE BOSTON SURGICAL SOCIETY, INC.

Vol. 186, No. 13
$6 per Annum, 25c per copy.

THURSDAY, MARCH 30, 1922

Published weekly in Boston
at 126 Massachusetts Avenue

CONTENTS

ORIGINAL ARTICLES

THE THEORY OF PSYCHOANALYSIS. *By John F. W. Meagher, M.D., F.A.C.P.*, Brooklyn, N. Y.

ACHYLIA GASTRICA. *By Louis Fischbein, M.D.*, Boston.

THE EXTRACTION OF NON-MAGNETIC FOREIGN BODIES FROM THE ANTERIOR CHAMBER OF THE EYE. *By William F. O'Reilly, M.D., F.A.C.S.*, Lynn, Mass.

EDITORIALS

THE DEVELOPMENT OF SCHOOLS OF TROPICAL MEDICINE.

CONSTRUCTIVE ACTION BY THE AMERICAN MEDICAL ASSOCIATION.

THE ADDRESS OF THE DEAN OF THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.

PSYCHOANALYSIS.

For complete table of contents, see first text page.

THE NEXT ANNUAL SESSION OF THE MASSACHUSETTS MEDICAL SOCIETY WILL BE HELD IN BOSTON JUNE 13 AND 14, 1922

Surgical Practice

IN THE PHILADELPHIA NUMBER—SURGICAL CLINICS OF NORTH AMERICA

Clinic of DR. JOHN B. DEAVER, Lankenau Hospital.
(Pathology by DR. STANLEY P. REIMANN.)
Duodenal Ulcer. Adenocarcinoma of Left Breast. Transperitoneal Hysterotomy. Recurrent Cholecystitis. Renal Calculus—Pyelotomy. Cyst of Liver—Excision.

Clinic of DR. J. CHALMERS DACOSTA, Jefferson Hospital.
Tumor of Pituitary Body, with Brain Abscess.

Clinic of DR. ASTLEY P. C. ASHHURST, Episcopal Hospital.
Stricture of Rectum. Carcinomatous Stricture of Rectum above Anus. Cicatricial Contracture of Buttocks nearly Occluding Anus. Abdominal Extirpation of Rectosigmoid for Benign Stricture due to Localized Muscular Hypertrophy. Carcinoma of Sigmoid Causing Chronic Obstruction. Pelvic Abscess from Carcinoma of Hepatic Flexure of Colon. Carcinoma of Ascending Colon. Carcinoma of Hepatic Flexure of Colon (2 cases).

Clinic of DR. CHAS. H. FRAZIER, University Hospital.
Brain Tumors in Relation to Cerebrospinal Fluid and Ventricles.

Clinic of DR. BROOKE M. ANSPACH, Jefferson Hospital.
Lacerated Cervix with Eversion; Relaxed Perineum; Retroflexio-version of Uterus. Ovarian Cyst with Slow Torsion, Necrosis, and Perforation. Large Cystocele and Uterine Prolapse in a Diabetic. Ureteral Stricture with Hydro-ureter, Nephroptosis, and Hydronephrosis.

Clinic of DR. GEORGE P. MULLER, University Hospital.
Embryonal Adenomyosarcoma of Kidney. Hemolytic Ictero-anemia Chondro-osteosarcoma of Finger. Thrombo-angeitis Obliterans (Buerger).

Clinic of DR. JOHN H. JOPSON, Presbyterian Hospital.
Fusiform Aneurysm of Femoral Artery. Large Abscess of Thigh. Tuberculous Cervical Adenitis.

Clinic of DR. WARREN B. DAVIS, Jefferson Hospital.
Harelip and Cleft Palate Cases.

Clinic of DR. JOHN SPEESE, Presbyterian Hospital.
Hemangio-endothelioma of Splenic Flexure. Hour-glass Stomach. Blood Transfusion in Secondary Anemia with Fibroma of Uterus and Sepsis.

Clinic of DR. DAMON B. PFEIFFER, Presbyterian Hospital.
Subpectoral abscess.

Clinic of DR. P. G. SKILLERN, Medico-Chirurgical Hospital.
Surgical Lesions of the Ulnar Nerve at Elbow. Ununited Fracture of Radius and Ulna. Comminuted Fracture of Head of Radius. Ununited Fracture of Transverse Process of Fifth Lumbar Vertebra with Massive Callus.

Clinic of DR. F. E. KEENE, University of Pennsylvania.
Unilateral Renal Tuberculosis Associated with Stricture of Ureter, Hydro-ureter, and Hydronephrosis.

Contribution of DRS. G. M. DORRANCE AND J. W. BRANSFIELD.
Burns—Acetic Acid Treatment.

Clinic of DR. JOHN F. X. JONES, St. Agnes' Hospital.
Chronic Cholecystitis with Stones. Gunshot Wounds of Chest. Double Amputation through Lower Extremities.

Clinic of DR. EDMUND B. PIPER, University Maternity.
The Toxemias of Pregnancy and the Puerperium.

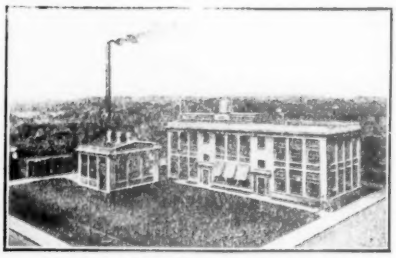
Clinic of DR. J. STEWART RODMAN, Presbyterian Hospital.
Injury to Cauda Equina.

Surgical Clinics of North America. Issued serially, one octavo of 300 pages, illustrated, every other month. Sold only by the Clinic Year (February to December). Six numbers. Cloth, $16.00 net; paper, $12.00 net.

W. B. SAUNDERS COMPANY — **Philadelphia and London**

Entered at the Post-office at Boston as second-class matter.

Atophan
TRADE MARK



Our Manufacturing Laboratories at Bloomfield, N. J.

Here's where genuine Atophan is manufactured by a special process completely precluding the possibility of unpleasant empyreumatic admixtures.

This means a still further improved Atophan for your cases of Rheumatism, Gout, Neuralgia, Neuritis, Sciatica, Lumbago and "Retention" Headaches.

Ample trial quantity and literature from

SCHERING & GLATZ, Inc.

150-152 Maiden Lane - NEW YORK

HAY FEVER MEMORANDA

Early Spring Type. Patients whose hay fever develops in late March, April, or beginning of May, should be tested with pollens of early flowering trees, as poplar, birch, maple, willow, walnut, and oak, which pollinate in the order named.

Late Spring Type. Patients whose hay fever develops in the latter part of May, during June or early July, should be tested with the pollens of sweet vernal grass, June grass, orchard grass, timothy and red top. The one giving the major reaction should be selected for treatment to the group. The unrelated rose pollinates simultaneously and is the primary or secondary cause in an occasional case —hence, should be included in tests, especially where direct exposure exists. The same is true of dandelion, daisy and in some sections alfalfa.

ARLCO-POLLEN EXTRACTS

For **Cutaneous Tests** and **Treatment** cover early and late Spring, also **Summer** and **Autumn.**

Literature and list of Pollens on request.

THE ARLINGTON CHEMICAL CO.

Yonkers, New York

30, 1922

The Boston Medical and Surgical Journal

TABLE OF CONTENTS

March 30, 1922

ORIGINAL ARTICLES

THE THEORY OF PSYCHOANALYSIS. *By John F. W. Meagher, M.D., F.A.C.P.*, Brooklyn, N.Y. 409
ACHYLIA GASTRICA. *By Louis Fischbein, M.D.*, Boston 413
THE EXTRACTION OF NON-MAGNETIC FOREIGN BODIES FROM THE ANTERIOR CHAMBER OF THE EYE. *By William F. O'Reilly, M.D., F.A.C.S.*, Lynn, Mass. 418

MEDICAL PROGRESS

PROGRESS IN GYNECOLOGY. *By Stephen Rushmore, M.D.*, Boston 420

LEGISLATIVE MATTERS 430
THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH 430

EDITORIALS

THE DEVELOPMENT OF SCHOOLS OF TROPICAL MEDICINE 431
CONSTRUCTIVE ACTION BY THE AMERICAN MEDICAL ASSOCIATION 433
THE ADDRESS OF THE DEAN OF THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL 434
PSYCHOANALYSIS 434

NEWS ITEMS 434
WORCESTER DISTRICT MEDICAL SOCIETY 436
EPIDERMOPHYTOSIS 436
THE LATE SYPHILITIC AS A THERAPEUTIC PROBLEM 437

MISCELLANY

LABORATORY WORKERS CONTRACT TULARAEMIA 438
DR. B. P. CROFT OF GREENFIELD REFUTES STATEMENT IN LOCAL PAPER 438
RÉSUMÉ OF COMMUNICABLE DISEASES FOR MASSACHUSETTS 438
RABIES 439

OBITUARY

JAMES WOODS BABCOCK, M.D. 440

CORRESPONDENCE

THE SCHICK TEST. *Franklin P. Bousquet, M.D.* 440
MEDICAL LIBERTY LEAGUE, INC. *Henry D. Nunn* 441
THE VOTE ON DR. HUTTON'S PROPOSITION. *W. A. Hutton* 441
REGISTRY OF BONE SARCOMA. *E. A. Codman, M.D.* 441
THE BUSINESS SIDE OF X-RAY DIAGNOSIS AND TREATMENT. *E. M. Sundelof, M.D.* 442

Original Articles.

THE THEORY OF PSYCHOANALYSIS.*

BY JOHN F. W. MEAGHER, M.D., F.A.C.P., BROOKLYN, N. Y.

Neurologist, St. Mary's Hospital; Consulting Neurologist, King's Park State Hospital, etc.

1. Definition
2. The Unconscious
3. The Wish
4. Psychic Energy
5. Repressions
6. The Conflict
7. Technique
8. Transference
9. Dream
10. Symbolism
11. Associations
12. Resistance
13. Sublimation
14. Compensation

Psychoanalysis is a method, employing a special technique, to study the unconscious mental life; to get at the deep, fundamental motives of human thought and conduct. The usual causes given by a patient for a neurosis are generally only rationalizations or excuses. The entire theory is based on the assumption of an unconscious mental state; the need for which Freud discovered in studying psychic repressions.

*Read before the Bay Ridge Medical Society, Nov. 10, 1921; and before the Alumni Association of St. Mary's Hospital, Nov. 21, 1921.

Our unconscious might be described as our whole mental past,—most of which is completely outside the focus of attention. It includes all that we have thought, felt, and willed. Bergson, not an analyst, and the greatest philosopher of the mind of the past century, says that most of our past is unconscious. The unconscious is quite similar in all people,—individual differences lying in the conscious, in the forces of education, culture, morality, judgment, etc. Much of our past (especially our childhood) has been barred from us by culture.

Our unconscious—as is the infant—is egoistic and often asocial, and does not reason. Its sole function is to wish. The unconscious manifests itself consciously in the form of dreams, neurotic symptoms, psychoses, wit, slips of the tongue, etc. It is well known that the unconscious manner of some people has greater effect than their conscious efforts.

Needless to say, it does not annihilate a bad trend to make it conscious; this merely brings it under intelligent and rational control.

One can say that the beginning of the unconscious coincides with the beginning of repressive influences, necessarily exercised in socially training the child.

The unconscious wish is one of the most important elements in the psychoanalytic theory. Dunlap, a severe critic of Freud, admits that Freud's study of the influence of the wish is a great contribution to psychology.

The wish is the unit of mental life in the psychoanalytic theory, as the sensation was of the older academic psychology. We spend much

of our life wishing and working to gratify our wishes.

Unconscious wishes (trends, longings, cravings, ambitions) are usually expressed symbolically. All unconscious wishes are not sexual, though these are very important; there are wishes of hunger, convenience, etc. The reason for the high incidence of sex wishes in dreams, lies in the fact that no other element is so greatly repressed by consciousness. In the dreams of young children, who know nothing of sex in the adult sense,—and whose repressions are chiefly concerning eating—food, especially sweets, occupies a prominent place.

One's will power depends on the strength of one's wish; it may be weak enough merely to phantasy a situation, or strong enough to act vigorously. In animals, the wish (craving) is followed almost immediately by action; in man, where deliberation and judgment enter, there is a delay. We see the wish unconsciously fulfilled in the dream, hallucination, and delusion.

Excessive phantasying interferes with reality. It is the easiest way for one to react and is characteristic of children, hysterics, and to some extent, the aged. It is well known that the symptoms of hysteria represent an unconscious wish, gratified in a symbolic way. The wish of neurotics is followed by childlike imaginations,—these replacing real achievements. Uncorrected abnormal phantasying in a child tends toward unusual character traits in later life.

Energy is the dynamic force of mental life for gratifying or satisfying needs. Though there is some dispute as to its origin (muscle spindles, etc.), this does not prevent our studying its expression (as we do with electricity, ether waves, etc.)

One could leave the phantasies alone, if the energy were bound up in them. But it is not. It is in great part "free-floating," and if it is not utilized, it keeps the patient tense, uncomfortable, or ill. Energy which is fully utilized properly, brings happiness and success. We know that much stored-up energy can be dissipated by means of speech.

It is important to remember that the repression of an unconscious craving does not eliminate the craving. By repression is meant the complete forcing of primitive instincts and aims, without conscious deliberation, into the unconscious; or the prevention (by the agencies of culture) of these becoming conscious at all. Where this is done after conscious deliberation, we call it suppression.

The thoughts repressed are those which are incompatible with adult ideals and ethics. Most people gradually react to the repressions incidental to cultural training in general, so as to respond only to socially approved stimuli. Normal life depends on repression, (effects of conscience). It is protective to the main trends of the individual, *e. g.*, the desire for safety, power, etc.,—the need for social esteem. We might say that a neurosis represents a partial, and a psychosis a complete failure of repression.

Repression, however, must never be exercised alone. It must go hand in hand with a sublimation of certain interests, thus permitting an outlet for the individual's energy and feelings. Excessive repressions in the parents are reflected in the children; an environmental and not a hereditary sequence. An individual unduly repressed, and living in a narrow, selfish, uncongenial atmosphere, is immeasurably more apt to break down, than one living and working in happy, pleasant surroundings. Numerous absorbing interests act as safety valves. It is evident why rest is useless in many patients suffering from one of the neuroses.

A mental conflict ensues wherever the wish, holding to its infantile demands, is opposed to the patient's conscious desire to be regarded as socially ethical and estimable. For infantile wishes and social demands clash. Social approval is even more necessary in the adult than in the child. Where the unconscious wish is powerful, a neurosis results. The neurosis is thus a by-product of the ordinary civilizing influences (environment, education, religion, etc.) acting on certain types. As a rule, the graver the illness, the stronger is the repressed element, or else the weaker are the cultural trends of the personality. The neurosis or the psychosis comes as a relief; it is really a compromise. For the repressions seeking an outlet, cause the neurotic illness. If you understand the patient's conflicts, you will not be working in the dark, nor depend on mere "confidence" to aid him.

Your first examination of the patient, physical and mental, is important to decide that no organic disease is present. Next decide whether he belongs to the type of cases suitable for analysis by studying his personality make-up. A history only gives you some of the superficial conscious elements concerning the neurosis; often a misleading and distorted story. For the natural tendency is to paint a socially good picture. It is a mistake to think you can bring out everything on the first interview. The patient may be antagonistic to questioning. Go into the patient's fundamental desires and ambitions; and how he meets them; what his most important thoughts and actions are; his conscious worries and conflicts.

It is most important to study the family and environmental relations. Never forget that the picture of the neurosis is colored by the peculiar traits of the individual, and that the causation of the neurosis is invariably bound up to another member of the family,—the latter usually acting as a repressing influence. It is well known that most neuroses show a very definite onset.

Never forget that your attitude must be an objective one. You must be totally unprejudiced if you expect to secure a positive transference

(confidence) from the patient. Without this, analysis is difficult or impossible. The patient must do most of the talking. Early and frequent explanations by the physician are mistakes and are not analyses. It is the patient's deep motives that you are looking for; and your hasty interpretations may be faulty and might jeopardize the analysis. Never ask questions that will cause resentment. Remember, too, that psychoanalysis is primarily a study of the unconscious, and not of sex. Early direct probing along the lines of sex is not desirable.

In making your preliminary physical and mental examination observe carefully all details concerning the patient,—his attitude, mannerism, contradictions, slips of the tongue, symbolic acts, etc.

True, these nervous patients have numerous paraesthesiae, and various symptoms,—subjective chiefly, with only a few objective findings. Complaints in the gastro-intestinal and gynaecological spheres are common. But it shows loose thinking and faulty logic to treat the patient for these metabolic disturbances, and to neglect the problems underlying and really causing the neurosis.

The special technique employed in psychoanalysis consists of dream analysis, free associations and word associations, analysis of symptomatic acts (mannerisms, slips of the tongue, mistakes, etc.); interpreting the meaning of the symbols in the dream and in the symptoms; a study of the resistances of the patient,—internal (love, fear, hate, etc.) and external (money, etc.); and a study of the transference, and whether a positive or a negative one. It might be emphasized that a most important aim of analysis is to uncover a patient's resistances. You are trying to find out what the neurosis accomplishes for the patient, and why this is so.

By transference is meant the projection of the patient's feelings to the physician. It is the only part of psychoanalysis that can be compared to suggestion, with which the rest of the theory has nothing in common. The transference can be positive (confidence), or negative (aversion, distrust). It is the key to the cure by analysis, and is a very difficult part of the method to manage skillfully. Other things being equal, the transference is usually positive to the physician and to the clergyman. The reason for this lies in what White calls the safety motive; the desire for power, and the protection from death or failure (mental, physical, social, sexual, economic); a desire for safety here and hereafter. It is necessary to remember, however, that mere dependence of the patient on the physician is not good; he must be taught adult ways of reacting. The patient needs genuine, not merely sentimental sympathy; and he wants more than a technical interest in his condition. Hurting a patient's feelings will cause a negative transference.

The dream is the mirror of the whole mental past. It has nothing to do with the future. It is the most important element in the analysis, and is the best route for getting at the unconscious, of which it is a pure product. One must learn to analyze dreams in order to practice this method. The dream symbolically represents the unconscious. The dream as recited to you is what is called the manifest content. After interpretations, you get at the latent content—the important phase of the dream, which shows you the real motives in the dream, in which you always notice the fulfillment of a wish. The important latent content is changed by the dream work into the manifest content,—that which the patient remembers. The dream work in its mechanism employs condensation, displacement distortion, symbolism, and lastly, secondary elaboration,—resulting in the dream as made manifest to the patient. The infantile element is the most potent impulse in the formation of dreams.

The dream is really a compromise between the wish and the repressing forces *i. e.*, the disguised fulfillment of a repressed wish. An accumulation of excitement (energy) causes tension or pain; relief of the tension causes pleasure (gratification). The striving for pleasure is the wish.

Much of the manifest content of a dream is worthless,—one of the reasons why it is depreciated by academic psychologists. The strangeness of a dream is due in great part to the condensation.

In the dream, the wish from the unconscious unites with the harmless elements of the foreconscious part of the psyche,—as incidents of the previous day,—thus hiding the character of the wish.

The mechanism employed in the dream work may be compared to that operative in wit, or in a newspaper cartoon. In the dream, you get the patient to label the symptoms, by the use of freely associating ideas (spontaneously) to each separate part of the dream; just as in the cartoon, the artist labels each separate part of his picture.

By means of dream analysis, you will learn the wishes, conflicts, transferences and resistances of the patient. In the interpreting of symbolic representations, it is always to be remembered that it is the patient's interpretation (by means of free association), and not the analyst's snap judgment that is valuable.

The object of symbolism is to hide the true meaning of dreams and neurotic symptoms. A symbol is anything identified with or used as a substitute for something else. Studying the evolution of language, will give one a rich knowledge of symbolism. The reason that sex symbolism is so frequently found in hallucinations, dreams, etc., is because nothing is so absolutely repressed as sex. Symbols are quite similar in all people, and in all grades of cul-

ture. Whenever repressed trends do enter consciousness, they do so in a compromised symbolic form.

When the patient freely associates his ideas to each separate part of the dream, certain repressed material is thus brought to light, and noticeably important emotional reactions, etc., indicate the value of this material. This may reach far back into childhood. It might be said here that Jung and the Swiss School pay more attention to the present conflicts, claiming that early events and phantasies only determine the character traits, and not the neurosis.

It is well known, of course, that ordinary speech is often used to conceal rather than to tell what one really feels and thinks. A patient's explanation of the etiology of his neurosis is usually only an excuse to satisfy or to please himself. The physician must not be misled by these explanations.

The "word association test" was devised by Jung, and is much used by the Swiss School. Freud, however, does not think this test indispensable to psychoanalysis. A list of one hundred indifferent words are given to the patient, he responding to each by the first word occurring to him. The reacting word, the time, any emotional accompaniment, etc., are noted. Those bringing out positive results are called complex indicators, and are supposed to tap something disagreeable in the unconscious. As a matter of general information, one can say that the most frequent association to any word is its opposite,—as good to bad, black to white, etc.

Where two different ideas are connected by a superficial association (as a slight similarity in color, form, noise, etc.), they are also connected by a deeper and a more significant association.

Probably the most important aim of psychoanalysis is to dispel the patient's resistances. Resistance implies the continuation of the repressive influences against exploring the unconscious. So resistance is the repressing force which prevents the return to consciousness of the repressed elements. External resistances (financial, racial, etc.) are not nearly as important as internal ones (fear, love, hate, etc.).

Resistance will produce the opposite effect of a positive transference. The patient has to eventually see himself as he really is. If you cannot get the patient to overcome his resistances, you cannot analyze him. Needless to say, the patient is not cured, merely by learning the meaning of his symbolized symptoms.

Your object in analyzing the patient is to direct the energy which is being wasted by asocial cravings, into socially approved channels,—the latter furnishing good outlets for this energy. This we call "sublimation." Sublimation is a word borrowed from chemistry, and means to free or purify from base qualities. The process is an unconscious one, though the means are conscious (*e.g.*, religion, art, music, children, friends, etc.). Sublimation cannot be forced. The patient has to overcome his own resistances; that is, he wins not by undue repression, but by sublimation. This latter ability depends on the strength of his socialized character traits, inculcated in early childhood.

Where the patient feels that he is being persecuted, or that he is useless, etc., sublimation becomes difficult, because of the absence of feeling. In severe cases, where the patient can make no attempt at sublimation, deterioration is very apt to result.

For the student of character traits, a very interesting and valuable psychological mechanism is that of compensation. Psychic compensation might be compared to physiological compensation in organic disease. Failure of the one causes psychic death; of the other, physical death.

All people compensate, more or less, for their shortcomings and inferiorities; they do, at any rate, when these cause fear or anxiety. They may even over-compensate, that is, swing too far in the opposite direction, in their attempt to gain personal or social security. Thus, reacting to an indifferent situation prudishly and with great hate may be an over-compensation against the individual's own sexuality. It is a well known psychological fact that an unconscious tendency is often consciously expressed by its opposite tendency (over-compensation).

The value of this compensatory mechanism in the study of character rests on your ability to decide whether an important and dominant trait of the individual is real and fundamental, or whether it is only a compensation, or an over-compensation. Thus gentility may be a fundamental trait, or it may be a compensation to cover a weak spot. A genial manner can hide a feeling of hatred.

Before concluding this brief description of the theory of psychoanalysis, I would like to say this,—that these patients must be studied without prejudice, and with a sincere desire to help them. Superficially, they are often difficult to understand. Our old methods of study gave us little insight into their difficulties, whereas psychoanalysis enables us to get a better idea of their problems. You can help them to use their good character traits, and recommend good social outlets for their energies. In this way you help to diminish their asocial cravings. Rest often aggravates the neurosis—particularly if it permits of no outlet for pent-up feelings. And for the patient merely to fight his feelings and his symptoms, this uses up his energy and results in one of the prominent symptoms of the neurosis,—fatigue; or else, increases his already excessive tension.

Probably one of the most important things to remember is that it is not merely the patient's story that you are after, but rather,—when you come to know his real mental status—how you

can enable him to utilize the energy being wasted by the neurosis, (fatigue or hyper-tension).

Psychoanalysis is a comparatively new medical method. It has its dangers, and its practice by the laity should not be permitted. The genuine student must not be confounded with the irresponsible dilettanti. As I have said before, the method is not primarily one to study sex, but one to study the unconscious mental life. For those who would criticize the method, an attack on the theory of an "unconscious" state must be their chief point of attack. But the method, as a valuable medical study, has come to stay. As William Healy, the distinguished psychopathologist of Boston, has said, practically nothing of scientific value has been written against the method in the past ten years.

ACHYLIA GASTRICA.*

By Louis Fischbein, M.D., Boston.

[From the Medical Clinic of the Boston Dispensary.]

Primary *achylia gastrica* does not at present occupy the prominent position in the pathology of the digestive tract that it did a few decades ago. It is only occasionally that references to it are found in medical literature or that it forms the subject of discussion at medical gatherings, as clinicians and research workers nowadays focus their attention upon those gastric disturbances characterized by definite lesions in the walls of the stomach or duodenum. But *achylia gastrica*, while certainly of less significance than the diseases with definite anatomic lesions, is nevertheless of considerable interest and importance. We know that it is of more frequent occurrence than was formerly thought, and there is yet considerable vagueness among physicians as to its proper definition, as well as to its etiology and pathogenesis.

Many German and American authors, for instance, Boas, Matthes, Penzold, Austin, Bassler, and Einhorn, restrict the term *achylia* to a condition in which both acids and ferments are absent from the gastric contents after the usual test meal; cases in which the ferments are present and the HCl alone is absent are classified by these authors as anacidity or anachlorhydria. Other authors, like Leo, Strumpell, and Lockwood, speak of *achylia* and *hypochylia* when the HCl alone is absent or diminished, so that in a perusal of the literature, it is not always clear what kind of *achylia* the author has in mind. Besides, none of the authors, to my knowledge, except Albu and Martius, have laid any special emphasis upon the disturbance of motility, which, according to my observation, is constantly present in cases of *achylia*, constituting one of its most prominent characteristics.

In a careful study of a series of thirty cases of primary *achylia*, gastric hypermotility was found in every instance. After considerable straining and retching on the part of the patient, not more than 10 to 15 cc. of gastric contents could be obtained, consisting of a thick, practically neutral liquid with an admixture of mucus from the throat, in which were suspended a few poorly digested crumbs of bread used in the test meal. The acids and the ferments were either entirely absent, or, as in a few cases, present in small traces, and the total acidity was from 0–15; in the majority of cases, below 10. The appearance of the gastric contents in all these cases was so characteristic that a glance was sufficient to anticipate the diagnosis.

That the small quantity of the gastric contents and the difficulty with which they were obtained were due to an actual hypermotility and not to a plugging of the stomach tube by large particles of food, or to some other obstacle, was proven by the fact that lavage of the stomach in a few cases after the extraction of the test meal, did not alter the results. Only a few more crumbs could be obtained and the water returned practically clear. In a few cases these findings were confirmed by fluoroscopic examination, and in a few others by repeated examinations with the stomach tube, at various intervals. Nor were the results different when the stomach contents were extracted after half an hour, instead of the usual one hour.

Considering the uniformity of the results in this series of cases, it can safely be affirmed that hypermotility is a constant and distinguishing feature of *achylia*, so we must conclude that in *achylia* there is not only a disturbance in secretion, but a disturbance in motility as well. In anachlorhydria, the motility is either normal or impaired, —usually impaired, as evidenced by the large quantity of gastric contents, and especially of the sediments. Under the fluoroscope the peristaltic waves, in cases of anachlorhydria, are rather weak, and do not start till twenty to thirty minutes after the ingestion of the barium meal; the stomach, however, is empty after six hours. It is stated in all the leading textbooks on diseases of the stomach that the motility in *achylia* is usually normal, though impaired in some cases, and even increased in others. This statement is true, in a way, as the normal or impaired motility undoubtedly refers to cases of anachlorhydria which they classify with *achylia*.

The combined HCl, as estimated by the total acidity, is either entirely absent or present

*Achylia, as found in cancer, pernicious anemia and other wasting diseases, is, of course, secondary and is, therefore, excluded from this discussion.

only in traces in *achylia*, but is found in appreciable quantity in anachlorhydria, as the total acidity is from 0–10 in the former, and from about 20–40 in the latter. Anachlorhydria is a fairly common condition, while *achylia* is comparatively rare. In a routine examination of the stomach contents of all patients with gastric disturbance, it is only now and then that true *achylia* is encountered. While the difference between these two conditions is, in my opinion, of little practical importance, it cannot be ignored, because it corresponds to the actual findings in the stomach, and because a different etiology has been assumed for each of these conditions.

Primary *achylia*, in the sense in which the term is here used, is found almost exclusively in neurotics. It occurs more often in men than in women, and is more common in young adults and in the middle-aged than in the elderly. The reason for its rare occurrence in the elderly is, perhaps, that gastric disturbances, without anatomical lesions in the stomach, are infrequent among old people.

The symptoms found associated with *achylia* are manifold, and can be divided into three groups.

I. Here the patients complain of the ordinary symptoms of indigestion, such as fullness or distress in the gastric or abdominal region coming on immediately or shortly after meals, dryness of the lips and tongue, and a disagreeable taste in the mouth. In some cases there is, immediately after meals, a considerable distention of the abdomen, a feeling of fullness and pressure in the chest, embarrassing the respiration and constituting the so-called asthma dispepticum or pneumatosis. Constipation is usually present, although some patients have normal bowel functions, but the so-called gastrogenic diarrhoea, insisted by so many authors, was not noted in a single instance.

II. The symptoms in this group are more pronounced, and are, in some cases, so serious as to simulate some organic affection within the abdomen. They consist of lancinating pains, or of painful pressure in the region of the stomach, radiating to the sides and back. These pains appear a few hours after meals and are accompanied by nausea and, at times, by vomiting, which usually gives relief. One patient, a woman of about 38 years, presented almost typical symptoms of gastric ulcer. She was under observation for about two weeks in a public institution, where numerous x-ray examinations were made, with negative results. She refused an exploratory laparotomy, and was finally seen at the Boston Dispensary Clinic, where a diagnosis was made of neurosis and *achylia*. She was treated accordingly; with the result that her pains and vomiting disappeared, except during her menstrual period, when they reappeared, but in a much milder form. Another patient, a woman of 52, had for years, at frequent intervals, attacks of abdominal pain, accompanied by large, soft, non-diarrhoeic movements. These pains alternated with what might be called a vasomotor rhinitis consisting of an irritation in the nostrils, causing her to blow the nose incessantly for hours at a time, and persisting in spite of all sorts of local medical and surgical treatment. She finally had her abdomen explored and her appendix removed, but the pains and nasal symptoms still remain.

III. The stomach symptoms in this group are rather few and insignificant, while symptoms pertaining to the general nervous system are numerous and pronounced. One patient, a man of 36, complained of dizziness, of a sensation of tightness around the head which he experienced mostly before meals, of poor sleep, and general fatigue. He attributed his disagreeable sensations to constipation, which he considered to be the cause of all bodily and mental ills. On close questioning, it was found that he had regular daily evacuations, which he, however, considered insufficient, as he felt that "his bowels did not act as they should." Another patient, a woman of 49, complained of fullness in the stomach after a heavy meal, and of irregular bowel movements, but her dominant symptoms were "an all-gone feeling" several times a day, insomnia, and a vasomotor disturbance akin to angioneurotic edema. At intervals of a week or two, she suddenly experienced a sensation of heat and tension in the face, followed by redness and swelling, lasting for 18–24 hours. A gastric analysis was made, because the patient was told, and believed that "her troubles were due to indigestion." On objective examination, abdominal distention, with some tenderness, is found in a number of these cases. The abdomen, however, is soft, the tenderness superficial, and rarely found twice in the same place, so that it can be easily differentiated from tenderness due to an inflammatory process. But all these symptoms are merely associated with *achylia*, and are by no means typical of that condition; and the diagnosis rests entirely upon the examination of the stomach contents after a test meal. In some cases, traces of free HCl were found, but with the hypermotility and the other features of the gastric secretion these cases were classified as *achylia*. It does not seem probable that a mere trace of HCl would in any manner alter the digestive power of the gastric juice.

Tests for the pro-ferments and a quantitative determination of the ferments were omitted in all cases, as the results of the investigations of Hammerschlag and Oppler as to the parallelism between the secretion of HCl and ferments have not been successfully disproved. It might be true that some secretion of ferments still takes place when the secretion of

HCl has entirely ceased, but traces of ferments have no more practical significance than traces of HCl. In three cases a test for rennin was made according to the method of Martius. The patients were given a cupful of milk on an empty stomach, followed fifteen minutes later by the introduction of the stomach tube. With a normal ferment content, the stomach tube is, after ten minutes, filled with large curds, but no curds were found in the three patients thus tested. After fifty minutes, a few very fine curds were found, and the milk seems to have left the stomach before it had time to coagulate. It might be added that a test for rennin is, perhaps, a test for pepsin, as the identity of these ferments is still insisted upon by some physiologists. The fractional method of Rehfuss was not employed in the analysis of the stomach contents, because, in my opinion, it is inferior, for clinical purposes, to the older methods in vogue. The total quantity of stomach contents as obtained by expression, the appearance of the sediment, the quantitative relation between the liquid and the solids, are all, in some cases, of great importance. But they are, in my opinion, more easily and more thoroughly determined by the older methods than by that of Rehfuss. Besides, all our knowledge of the functional activity of the stomach, especially in *achylia*, has been gained by use of the older methods, which are still regarded as sufficient and reliable by many clinicians.

ETIOLOGY AND PATHOGENESIS.

The development of our knowledge of *achylia* is intimately connected with the history of chronic atrophic gastritis. Fenwick's report of his cases of pernicious anemia in which post-mortem examinations showed atrophy of the secreting glands of the stomach, was followed by a report of cases by Ewald, Nothnagel, and others, confirming Fenwick's observation as to the occurrence and seriousness of atrophic gastritis. But the functional methods of examining the stomach now in vogue were then unknown, and the recognition of the disease *intra vitam* was thought impossible. When, however, with the introduction of the functional test, cases were found with no gastric secretion, the natural conclusion was that this condition must be due to an atrophy of the secreting glands of the stomach, and the diagnosis of atrophic gastritis was thus clinically established.

No post-mortem examination was ever made in these cases, as none died during the supposed gastritis, but considering the rôle that the secretion of HCl always played in the physiology of digestion, the conclusion seemed justifiable that the absence of gastric secretion was necessarily due to profound structural changes in the stomach, and was, therefore, of grave import. A change of view, however, as to the fatal prognosis of atrophic gastritis, was brought about by the report of a case by Einhorn, followed by the report of several cases by Martius, disproving the grave prognosis of the affection. In Einhorn's case, the secretion returned after being absent three years, while Martius' patients enjoyed good health in spite of their lack of secretion.

It thus became evident that these patients could not have suffered from so-called atrophic gastritis, and Einhorn proposed the term *achylia* to designate the actual condition, regardless of its underlying cause. The term has been universally accepted, and clinicians have since divided primary *achylia* into (1) nervous, and (2) organic. Some authorities, as Boas, Knud Faber, and their co-workers, insist that all cases of *achylia* are organic and due to gastritis, simple or atrophic. But the existence of primary chronic gastritis, whether simple or atrophic, has never yet been satisfactorily established, although considerable space is devoted to its description in textbooks. Hayem, for instance, devotes numerous pages to the pathology of the different forms of gastritis, with many beautiful illustrations of their pathologic histology, but he is entirely vague and loses himself in generalities as to the clinical recognition of any of its forms. The diagnosis of chronic gastritis, according to Hayem, rests upon the finding of leucocytes and degenerated epithelial cells after lavage of the stomach! Other authors are even more vague, as they content themselves with an enumeration of symptoms present in any disarrangement of the gastrointestinal tract as characteristic of chronic gastritis.

Analogous with catarrhal conditions elsewhere, the presence of gastric mucus in the stomach contents would be indicative of gastritis, although it must be admitted that mucus in the stomach has not the same significance as elsewhere, because the stomach, according to many observers, secretes mucus under normal conditions. The mucus secreted normally is, however, small in quantity, of short duration, and disappears with the cessation of the irritating cause; while mucus found in inflammation of the stomach, as in cases of pernicious anemia, is constant, and forms a thick covering over the entire surface of the mucous membrane, so that the presence of gastric mucus in the stomach contents would be a strong presumption of chronic gastritis. However, in an examination of an extensive series of patients with gastric disturbance, gastric mucus was never found.

Structural changes found by microscopic examination of pieces of gastric mucous membrane obtained *in vivo* are, in the opinion of many pathologists, no indication of gastritis, as these changes might be normally brought about by the process of digestion, and also because the structure of the mucous membrane varies in the different regions of the stomach. There is

yet no unanimity of opinion among anatomists as to the normal histology of the human stomach, so that certain structural changes which are classified by some anatomists as pathologic are regarded by others as normal. All writers agree that inflammatory processes in the stomach are mostly at the pylorus; but the epithelial degeneration, the mitosis, the lymphoid infiltration which are looked upon by some pathologists as evidence of inflammation, are considered by others as belonging to the normal histology of that region. Moreover, primary gastritis, according to many pathologists, is practically never found at autopsies; so that the existence of primary chronic gastritis, whether simple or atrophic, is, in my opinion, a myth resting upon tradition and not upon accurate anatomical or clinical observation. Chronic gastritis found in alcoholism or in other forms of chronic intoxications, is not primary, and has no bearing upon the subject under consideration.

Neither is *achylia* due to primary cell atrophy in consequence of some local infection, as maintained by Bassler, as his observations were made upon pieces of gastric mucous membrane obtained *in vivo*, which, as stated above, are no indication of any pathologic changes in the stomach. Besides, primary cell atrophy, even if it does exist, need not involve all the secreting sells, and thus give rise to *achylia*.

Achylia, in my opinion, is a gastric neurosis.* It is, like hyperacidity and hypersecretion, either a symptom or a part and parcel of a general neurosis. Practically all the patients with *achylia*, under my observation, were pronounced neurotics, the majority of them being in the prime of life and in good physical condition, with no history of antecedent infection, intoxication, or other illness, to which their gastric disturbances could be attributed. In some the local, as well as the general, symptoms disappeared under treatment; in others, the local symptoms disappeared, while the general symptoms persisted. Some, after getting rid of their digestive disturbance, complained of headache, dizziness, or a feeling of faintness, so that there could be no doubt as to the nervous nature of the affection. Furthermore, the disappearance of the local symptoms and their replacement by general symptoms, or the persistence of the latter in spite of the disappearance of the former, is, to my mind, conclusive evidence that *achylia*, as well as the other functional gastric disturbances, is the result, and not the cause, of the general neurosis. In other words, a person is not a neurotic because he is a dyspeptic, but he is a dyspeptic because he is a neurotic.

A general nervous disorder, irrespective of its cause, manifests itself in a number of subjective and, in some cases, objective symptoms; the former are headache, vertigo, insomnia, general fatigue, etc.; the latter are the exaggerated knee-jerk, the false ankle clonus, the extra systoles, etc. It is the same in the nervous dyspepsias. The complaints are the subjective symptoms, while the disturbances in secretion and motility are the objective signs, and unless there be an anatomic lesion, there are no intestinal invalids, but nervous invalids in whom intestinal symptoms predominate.

Neither could the symptoms associated with *achylia* be due to chronic appendicitis, cholecystitis or other chronic inflammation within the abdomen. In some of the patients in this series, the gall-bladder or appendix was suspected and removed without, however, removing the symptoms. In others, there was nothing in the history, physical examination, or symptoms remotely to suggest a chronic inflammation of the gall-bladder or appendix. Besides, the importance of a chronically inflamed appendix or gall-bladder as a cause of vague gastrointestinal disturbances is, in my opinion, grossly exaggerated; and, excluding ulcer, carcinoma, and other organic diseases, it can be said that 90 per cent. of gastric disturbances are due, not to chronic appendicitis, cholecystitis, or to any other abdominal affection, but solely to the ebb and flow of the emotional life.

The influence of mental and emotional states, as demonstrated by Pavlov in the animals, has recently been proven by Heyer to be true also in man. The details of Heyer's experiments are to be found in the *Archiv für Verdauungskrankheiten*, and only a few of the findings can here be mentioned. As in Pavlov's dog, different foodstuffs had different effects upon the gastric secretions in Heyer's hypnotized man. After the ingestion of beef broth, there was a sudden rise in the curve of gastric secretion, followed, after a short interval, by a sudden fall; while after the ingestion of milk, the rise was gradual, did not reach the same height, and was followed by a gradual fall. But what could not be demonstrated by Pavlov on the dog, but was demonstrated by Heyer on man, was, that the mere suggestion of the foodstuffs had the same effects upon the functions of the stomach as their actual ingestion. There was the same sudden rise and fall of the secretory curve after the suggestion of beef broth, and the same gradual rise and fall after the suggestion of milk. Heyer also brought out in these experiments among others, that suggestions of a pleasurable nature slightly raise the curve of gastric secretion, while suggestions of a depressing nature depressed the curve, and that there is no necessary relation between hypersecretion and hyperacidity. I have observed this clinically and also that there is a parallelism between the secretion of acids and ferments. The latter is of special importance in connection with *achylia*, as the authors who distinguish between anachlorhydria and *achylia*, regarding one as functional and the other as

*See footnote, page 413.

organic, make the distinction solely on the absence of the ferments in the former, and their presence in the latter.

These experiments show that emotional states are followed by actual physiological and chemical changes; but why these changes should, in some cases, give rise to a hyperacidity or hypersecretion, and in other cases to anachlorhydria or *achylia*, is not known, and can only be surmised in analogy with nervous disturbances elsewhere. Nervous disturbances, while emotional in their etiology, are, after all, somatic in their effects, and the symptoms they give rise to are not imaginary, but real, produced or accompanied by actual physiological changes. It is only necessary to mention, for example, the flushing of the face from embarrassment, its pallor in fear, the trembling of the limbs in anger, the cessation or initiation of the menstrual flow in consequence of a fright, or any other painful emotion. In all these cases, however, the physiological disturbances are of short duration, of infrequent occurrence, and easily adjustable. In other cases, as in the nervous dyspepsias, the physiological disturbances may be of more frequent occurrence, of longer duration, not easily adjustable, and thus may even remain, in some cases, permanent. It is Biswanger who divides the neuroses into (1) those which are adjustable, and (2) those which are not adjustable (*"ausgleichbar und nicht ausgleichbar"*). Neurasthenia is to him an example of the former, and epilepsy of the latter. The same, with some modification, might be true of *achylia* and the other disturbances of gastric secretion and motility. *Achylia* and other functional gastric disturbances might be classified with the neuroses non-easily adjustable.

Albu believes that *achylia* is congenital or constitutional as he has observed it in thirty-one children, all under 10 years. These children were all anemic, poorly developed, with no history of gastrointestinal disturbance in infancy, and no antecedent infection which could possibly account for their *achylia*. These observations of Albu are, to my mind, additional evidence as to the nervous nature of *achylia*, as a congenital absence of an almost universal function cannot be explained on the theory that a function disappears when it is of no more use to the organism. A congenital defect of that kind is rather an indication of a constitutional disturbance, perhaps a constitutional neurasthenia, although it is not assumed that all cases of *achylia* are due to constitutional neurasthenia. As to the rôle of the endocrines in the etiology of the functional disturbances of the stomach, next to nothing is known, and terms such as adrentrope, pituitrope, and thyrotrope in connection with gastric disturbances are at present only high-sounding names, without real significance.

TREATMENT.

The treatment of *achylia* is general, dietetic, and medicinal. These measures are not mentioned in the order of their importance; they are all essential to the successful management of these cases. The general treatment comprises a variety of methods, of which psychotherapy is the most important. The term psychotherapy is here used in the widest sense, and includes, besides persuasion and encouragement, rest, recreation and physical exercise—measures which, while beneficial in themselves, owe a great deal of their importance to the psychic element which they contain, and which I believe to be a great factor in obtaining the desired results. The manner of life of the patient is carefully investigated; if he is overworked and worn out, rest and a change of environment are desirable. If these measures are not possible on account of economic or financial conditions, the patient is helped so to adjust his work as to give him some time for rest and recreation, suitable to his temperament and environment, at home. If, on the other hand, his occupation obliges him to lead a more or less sedentary life, gymnastic exercises, not at home, but in class in a public gymnasium, will be found of the greatest possible help. The psychic element in all these measures is apparent, especially in the gymnastic exercises, as the healthful atmosphere prevalent in a public gymnasium, the spirit of cheerfulness, the enthusiasm, the belief that these exercises will expand the chest and develop the muscles, are all as beneficial as are the exercises *per se*. (It may be added that the practice of psychotherapy does not necessarily presuppose an expert knowledge of psychology, provided that the physician has a sympathetic understanding and fully recognizes the nervous nature of the affection of which the patient complains.)

DIET.

This is very simple and is based upon the hyperesthesia of the stomach which I believe to be the immediate cause of the gastric symptoms. It is a mixed diet from which those foods alone are excluded which, by their chemical or mechanical action, might cause irritation and distention of the stomach. Such a diet consists of bread and butter, well-cooked cereals, lean fish baked or broiled, lean meats broiled or roasted, cooked vegetables in puree form, including potatoes; simple puddings made with butter, baked, cooked or stewed fruits, light coffee or tea with milk. All fried foods, all smoked and salted meats and fish, pastries, spices, raw fruits, raw vegetables, and salads are excluded. Raw milk, heavy cream, and thin soups of any kind cause distention of the stomach, and are not as well borne as solid foods properly pre-

pared. Regularity in the hours of eating is insisted upon, and the meals are limited to three a day. The diet as here outlined is nourishing, easily digested, and relished by those patients especially who have lived for months on soups and semi-solids.

MEDICINAL.

There seem to be varieties of medical experiences, as there are varieties of religious experiences. Dilute hydrochloric acid, which has been highly recommended by almost all authors as the drug par excellence in *achylia*, has been found, in my experience, to be not only of no benefit whatever, but, in some cases, even to aggravate the dyspeptic symptoms. And yet, nowhere in therapeutics do the indications for a drug rest upon more rational grounds than the indication for HCl in *achylia*. It seems that HCl, in spite of its importance in aiding the chymification of the food and exerting an antiseptic action upon the stomach, is not necessary for digestion. In experiments on metabolism made by Von Noorden, no difference was found, as to digestion or assimilation, between patients with *achylia* and patients with normal stomach functions, and these experiments are completely confirmed by clinical observation. One male patient who has been under observation for about ten years, is still in excellent physical condition, although no trace of HCl has been found in his stomach in numerous examinations at various intervals. Many authors insist upon the vulnerability of the gastric mucous membrane, and upon its liability to small hemorrhages, on account of the absence of the antiseptic action of the gastric juice. It is true that small hemorrhages are not rare in *achylia*, but it is questionable whether they come from the stomach, as they are often found in cases of normal or hyperacidity when the difficulties attending the extraction of the stomach contents are the same as in *achylia*. Neither have I seen any benefit from nux vomica, tr. cinchonae comp., and the other so-called stomachics. These drugs are recommended in many gastric disturbances because they increase or stimulate gastric secretion; but it is a fact that in the majority of cases of stomach disorders there is plenty of secretion, and even when the secretion happens to be absent, as in *achylia*, these drugs are unnecessary, as the patients seem to get along very well without gastric secretions.

On the other hand, drugs like the bromides, chloral hydrate 0.1-0.15 per dose, ext. of valerian, and tr. opii gtt 2-3 per dose, have been found of decided benefit in *achylia*. They act as sedatives to the stomach as well as to the general nervous system, and their beneficial effects are an additional proof that primary *achylia* is either a symptom or a part and parcel of a general neurosis.

While the plan of treatment, as here outlined, has been successful in the majority of cases, a few patients, either rebellious to suggestion or constitutional neurasthenics, did not show the desired improvement. It is true here, as in other types of neurosis, that, as Boas says, the last physician whom the patient consults holds the trump card in his hand.

SUMMARY.

1. Achylia gastrica is a type of functional indigestion characterized by an absence of secretions combined with hypermotility.

2. It is found almost exclusively in neuroties, and, in some cases, the dominant symptoms of the neurasthenic may overshadow the underlying indigestion.

3. The digestive disturbance is the result and not the cause of the general neurosis.

4. The treatment is general (psychotherapy), dietetic, and medicinal.

BIBLIOGRAPHY

Austin, A.: Diseases of the Digestive Tract, 1916.
Albu, A.: Die Verschiedenen Formen der Achylia Gastrica, Ther. d. Gegenw, 1913.
Bassler, A.: Gastric Cell Primary Atrophy, J. A. M. A., 73: 405, 1919.
Boas, I.: Diagnostik Ther. d. Magen Krankheiten, 1920.
Eichhorst, H.: Ueber anatomische Magenveraendernaugen bei Gastrischen Krisen der Tabischen, Med. Klinik, 1909.
Einhorn, M.: Diseases of the Stomach, 1911.
Ewald, C. A.: Ein Fall von Atrophie der Magenschleinhaut, Berlin. Klin. Wochenschr, 1886, quoted by Martius.
Faber, K.: Symptome u. Behandlung der Achylia Gastrica, Ther. d. Gegenw, 1906.
Die Aetiologie der Chronischen Achylia Gastrica.
Arch. f. Verdauungskrankheiten, Vol. xxvii, 1921.
Fenwick, S.: Lectures on Atrophy of the Stomach. The Lancet, 1877.
On Atrophy of the Stomach and Certain Nervous Affections of the Digestive Organs, London, 1880.
Friedenwald, J., and Morrison, T. H.: Gastrointestinal Disturbances in Pernicious Anemia, J. A. M. A., 73: 407, 1919.
(See also discussion of papers of Bassler and Friedenwald which follows the above article.)
Hammerschlag, A.: Untersuchungen ueber das Magen carcinous, Arch. f., Verdauungskrankheiten, 1896. Internationale Klinische Rundschau, 1894, quoted by Martius.
Havem, G.: Maladies de l'estomac, 1913.
Heyer, G. R.: Die Magensecretion beim Menschen, Arch. f. Verdauungskrankheiten, xxvii, 1921
Leo, H.: Beitrag z. Ther. der Magen Krankheiten, Ther. d. Gegenw, 1904.
Lockwood, G. R.: Diseases of the Stomach, 1913.
Martius, F., and Lubarsch, O.: Die Achylia Gastrica, 1897.
Matthes, M.: Differentialdiagnose innerer Krankheiten, 1921.
V. Noorden, C.: Ueber die Ausnuetzung der Nahrung bei Magenkrankheiten, Zeitschrift f. Klin. Med., xvii, 1890, quoted by Martius.
Nothnagel, H.: Cirrhotische Verkleinerung des Magens, D. Arch. f. Klin. Med., 1879, quoted by Martius.
Oppler, B.: Quantitative Pepsin bestimmung, Centralblatt f. innere Med., 1896, quoted by Martius.
Penzold, F.: Handbuch d. Ther., vol. ii, 1909.
Rehfuss, M. E.: Oxford Medicine, vol. iii, 1921.
Analysis of Chronic Gastritis, Penn. M. J., 24: 233, 1921.
Strumpell, A.: Pathologie und Therapie, 1903.
Talma, S.: Die Magenmukosa bei pernizioeser Anemie, Med. Fischbein Klinik, 1909.

THE EXTRACTION OF NON-MAGNETIC FOREIGN BODIES FROM THE ANTERIOR CHAMBER OF THE EYE.

BY WILLIAM F. O'REILLY, M.D., F.A.C.S., LYNN, MASS.

IT is claimed by statistics that from 20% to 25% of all foreign bodies entering the eye find lodgment in the anterior chamber.

With the exception of the lens, no other part of the eye tolerates a foreign body as well as the anterior chamber. Therefore, one may relatively take more deliberate time in its removal. In the presence of blood, we should not delay the localization and removal of a piece of iron or steel; but we may with considerable safety await the absorption of the blood before trying to locate and remove a non-magnetic foreign body. In both classes, siderosis of iris and infection should not be disregarded.

As the removal of magnetic bodies lies within the province of the magnet, it is not the object of this paper to touch upon them, but to confine its scope to those of the non-magnetic type. Of the latter, too numerous to tabulate, the most common organic and inorganic foreign bodies finding lodgment in the anterior chamber may be noted, viz: Copper, glass, wood, stone, paper, lead, gunpowder, zinc, earth, ivory, carbon, bark, coal, cilia, brass, clothing, bone, celluloid, cement, lime, slate, etc.

Patients of this type are a common occurrence to the average ophthalmologist located in an industrial centre, and are often met by him with considerable nonchalance, but dispatched with considerable chagrin when he contemplates the immediate difficulties he has experienced in what seemed to be a very easy removal.

The anterior chamber may be filled or reformed, partly or completely empty, with partial or complete hyphemia, and the corneal wound even in a fresh case difficult to find. The majority of my cases showed a fairly well-filled anterior chamber with very little blood, fibrin and exudate—no case being older than seventy-two hours.

Were it not for the iris, which invariably plays an important part in these cases, the operator would have no misgivings, and all extraction technique would be reduced to a simplicity, but the anatomy and physiology of the iris and the ready lodgment of the foreign body on or in it, taxes the skill of the surgeon to the utmost. In a few instances the delicate markings of the iris, indistinguishable to the naked eye, with the aid of a good direct or indirect light enhanced by binocular or stereoscopic loupe, obscure a minute body even with a contracted pupil, making the use of the Roentgen rays indispensable. The large and small iris crypts often engulf or tenaciously claim the invader of the eye, and traumatic reaction and swelling adds to the process, and hopes entertained by contraction and dilation of the pupil by eserine and atropine are often defeated as a result of the action of the iris dilator and sphincter. In such cases, all other means of removal being futile,—that part of iris engaging the foreign body must be removed, that is, an iridectomy becomes a necessity.

But an iridectomy is destructive surgery, and in these cases, conservative surgery is paramount. Text books advise the removal of foreign bodies in the anterior chamber and iris by the use of forceps inserted through a keratotomy wound lying close down to the iridic angle, eliminating a posterior lip. To a keratotomy no exception can be taben, but to the forceps no matter how ingeniously constructed or deftly manipulated, the exceptions are obvious. For example, a particle of coal or gunpowder may break into a dozen smaller fragments with the most delicate two finger forceps grasp, a small hard body fly away; or, most common of all, the body not engaged alone, but considerable iris tissue entangled in the forceps bite, making an iridectomy obligatory.

To overcome these embarrassments and consequent complications, I have been using the following method. A two inch strand of horse hair, fine or coarse as conditions indicate, is looped and free ends inserted into an ordinary dental broach holder. The loop of hair is sized and moulded and bent to suit the individual case. The usual low non-posterior lip keratotomy is made nearest the foreign body. The incision should be small, just enabling the loop to enter chamber (loop contracts in incision, expanding after entrance into chamber and chamber does not empty) and loop passed over foreign body, encircling it. Distal end of loop is depressed and foreign body gradually drawn toward corneal opening. Several engagements of the body by the loop may be necessary before the body reaches the chamber angle. It may be drawn out immediately, or if large or irregular or rough incision may be enlarged and object looped again from its position at angle. Ofttimes a little flow of aqueous humor aids the procedure. Irregular and rough bodies engaged in iris and tilted toward or away from entrance incision may be pushed or pulled from their anchorage before or after looping, respectively. Objects more firmly imbedded may be pried out by bending or fashioning distal portion of loop as conditions demand. In short, the instrument is made and remade to suit the case and the conditions that arise in the extraction of the foreign body. Slight losses of aqueous occasioned by repeated insertions are readily remade in the intervals. Aseptic procedure, cocaine anesthesia, usual post-operative measures are used.

The advantages of this comparatively simple operation are:

1. Ability to work in filled anterior chamber.
2. No disturbance of anterior limiting layer of cells of iris.
3. No entanglement of iris.
4. Absence of operative hemorrhage.
5. Minimum post-operative reaction.
6. No undue pressure on intraocular contents.
7. An inexpensive adaptable instrument.

REFERENCES.

Campbell, Don M.: Injuries to the eye with report of 1051 cases. Reprinted from the American Journal of Ophthalmology. May, 1921. Vol. 4, No. 5. Pages 8 and 9.

Fuchs, Hofrat Ernest: Text Book of Ophthalmology, sixth edition. Lippincott 1919. Pages 347, 563, 1006.

Sweet, William M.: X-ray localization. Lecture Oct. 21, 1921, Philadelphia.

Fox, L. Webster: A Practical treatise on Ophthalmology. Appleton, 1910. Pages 503, 513.

Beard, Charles H.: Ophthalmic Surgery. Blakiston, 1910. Foreign bodies in Anterior Chamber. Page 617.

Medical Progress.

PROGRESS IN GYNECOLOGY.

BY STEPHEN RUSHMORE, M.D., BOSTON.

CANCER OF THE UTERUS AND RADIUM.

FRANKL AND AMREICH[1] report the results of a careful study of the histological change in cancer following the application of x-ray and of radium.

The first changes are evident on the third and fourth days; the greatest effect was noted between the fifth and seventh days; and the rays were no longer effective after the fortieth day. Following indirect radiation, the changes appeared more slowly, and the effect wore off sooner.

Comparing the results obtained from x-ray treatment and radium therapy, they found the same histological changes: first, edema, then enlargement of the cells and the carcinoma nest penetration of lymphocytes, vacuolization, and other changes found after such treatment. On the whole, they found that the changes took place sooner after treatment with x-ray than with radium.

These facts induce them to advise the use of x-ray in treating the parametrium and the glands, while the use of radium is preferable in treatment of the carcinomatous crater.

Burnam[2], working with Kelly and other associates, has had the benefit of a relatively large quantity of radium and years of experience, and a considerable number of patients. His conclusions are, therefore, especially likely to carry weight.

He notes the results in three general classes of pelvic cancer in women,—of the vagina, of the body of the uterus, and of the cervix of the uterus. Cancer of the vagina is practically incurable by operation—about one to two per cent. of cures. In 129 cases treated by radium, there were 15 complete cures, four for more than five years, and one for nearly nine years.

Cancer of the body of the uterus is not in general suitable for radiation, so that if the growth seems eradicable (a fairly high percentage), operation is preferable. Nevertheless, in cases where operation is inadvisable, radium has given marked relief of symptoms, and sometimes apparent (temporary) cure.

In some cases there has been complete histological demonstration that radium can cure cancer of the body of the uterus, where the uterus has been removed after preliminary treatment with radium.

On account of the much greater frequency of cancer of the cervix, it is the most important group. Three classes are generally recognized—operable, border-line, inoperable.

"Taking our experiences as a whole, the following results have been obtained in cancer of the cervix:

	Cures.
Radiation alone—operable cases	50%
Radiation preliminary to operation—operable cases	46%
Radiation prophylactic after operation	43%
Radiation in border line	31%
Radiation in inoperable	9%
Radiation in recurrent inoperable	11%

"In considering the relative values of surgical and radium methods, there is possible competition only in sub-group 1, the operable cancers." (Burnam does not state the test of cure in the above series.)

"Of 200 border-line cases treated by radium over five years ago, thirty are still living and free from all evidence of the disease, and in one case the cure has been for eleven years."

"It is true that the anatomical structure and position of the cervix permits of an intensity of radiation without serious injury to normal structures quite impossible in most places where epitheliomas occur. However, in skin cancer, particularly, we have been impressed by the fact that certain growths enormously tolerant to radiation are readily curable by extirpation, and it is not a far step to assume that the same condition holds true in cervical cancers. Granting that this is the case, a combination of radium and operation would seem to be the most logical treatment. I should advise that radium alone be limited to the old, the diabetic, the nephritic and other constitutionally sick cervix cancer sufferers; that radium and operation, or operation alone, be used with the remainder, until definite conclusive evidence is at hand."

"Let us emphasize that the beginners should not wade through all the misadventures which we, as pioneers, have gone through. The cost to the patient is too high. Take time, go to those who have had experience, and learn how to treat safely."

Stone[3] expresses views less favorable to operation. "In the hands of a few highly trained pelvic surgeons, at the expense of a high primary mortality and numerous complications and sequelae, a definite percentage of permanent cures has been obtained, compared with which, because of the factor of time, our present estimate of radium must be largely measured by the primary results. Operations, therefore, for the treatment of uterine cancer, continue to be performed to an unjustifiable extent, producing unnecessary suffering and mortality, and bringing discredit to both operation and all other sincere efforts to cure the disease. For all cases, therefore, of primary uterine cancer, with few exceptions, radium should be regarded as the method of choice." Of the great value of radium for relief, in most cases, primary and recurrent, and prophylactically after operation, Stone is convinced, but he judiciously refrains from using the term "cure." Too short a time has elapsed

to make claims in regard to cures by the use of radium.

In early cancer of the cervix, he is inclined to use radium without operation; but on account of the occasional occurrence of lymph-node metastasis, a condition not amenable to treatment by x-ray or radium, according to Stone, operation may sometimes be advisable. But radium "one or two weeks prior to the operation, will materially improve the results that have hitherto been obtained by operation alone."

"Lastly, a strong plea is made to avoid treatment of primary cases that are too far advanced. Unless this warning is generally and promptly heeded, much unnecessary suffering will continue to result, and radium will soon be as discredited as is the operation, in the eyes of the public. There are numerous primary cases in which the general health appears to be little, if at all, affected, but in which the local lesion has advanced so far that all of the normal anatomical relations of the pelvic structures are obliterated. To treat such cases will result only in the premature production of the terminal stage of the disease."

Kohlman[4], on the basis of his experience with radium in cancer of the cervix, recommends that all inoperable cases be given the treatment. The primary results are sometimes quite marvelous, but caution should be used in speaking of a cure. In case of a recurrence following operation, radium should be tried, but the results are not very satisfactory.

Preoperative radiation, if used, should be followed by early operation, not more than four weeks. A longer interval seems to increase the difficulty of the surgical procedure. Kohlman uses post-operative radiation as a routine, but calls attention to the greater care which must be employed in these cases to avoid fistulas.

In regard to the questions as to whether radium should be the treatment of choice in early and operable carcinoma, Kohlman inclines toward an affirmative answer. The results, though highly satisfactory so far, need time for a more thorough and complete test. As an accessory in extensive cauterization, Kohlman commends ligation of such arteries as are accessible, as ovarian and internal iliacs. The results in his hands justify the procedure.

Kohlman also calls attention to the fact that improvement promptly follows the use of radium, as a rule; if there is no improvement after two treatments, further use of radium makes no impression on the growth.

Taussig[5] makes an analysis of some failures in radium treatment of cervical cancer. "The wonderful palliative results and considerable number of cures following the radium treatment of cervical cancer, have been satisfactorily established in the reports of various clinics in the last five years. In the future, our efforts should be directed, not to the narration of occasional successes, but to the analysis of our still far too frequent failures with this method of treatment. Only by such a critical review of the technic and results of various methods of treatment can we hope to find measures that will bring our permanent results to a point in advance of those obtained by surgery."

Recognizing the limitations necessary now, he tentatively summarizes his conclusions as follows:

1. Radium treatment of uterine cancer should be kept in the hands of the gynecologist rather than the roentgenologist, but such a gynecologist should seek preliminary training in the use of radium and must have continued opportunity for observation and treatment of cancer cases in order to reduce mistakes to a minimum.

2. Good permanent results can be obtained in a certain proportion of cervical cancers with amounts of radium not exceeding 100-150 mgrs. of the element, though the use of large amounts in the form of emanation will doubtless decrease complications and increase the number of cures to some degree.

3. If possible, all necessary treatment should be given within the first six- to eight-week period before sclerosis has set in and rendered the cancer less accessible and the normal tissues more susceptible to injury.

4. Tumor filtration, or light metal filtration, together with intracervical application, does most good and least damage; 2500 to 3500 mgrhs. are usually enough to give results in the favorable cases.

5. In the absence of the Bailey bomb and large amount of emanation, well directed and prolonged x-ray from 6–8 portals will usually affect the parametrial and glandular involvements.

6. Prolonged necrosis and fistulas are due to repeated treatments, to vaginal applications and to heavy gamma radiation, or to a combination of the three.

7. Rectovaginal fistulas are more frequent and vesicovaginal fistulas less frequent after radium treatment.

8. Operation is to be preferred in all operable cases under 35 years, and in the early operable cases beyond this age. Radium is to be recommended wherever obesity, lung, heart, or kidney lesion, makes operation difficult or dangerous, and in advanced operable, borderline, and inoperable, but not in the advanced inoperable group with cachexia.

CANCER OF THE UTERUS AND OPERATION.

Although, in the opinion of some, radiation of cancer of the uterus is the best method of treatment, still it is only by a careful study of the results of operation that a fair basis for comparison can be obtained. If for no other reason than this, Mayer[6] justifies his account

of the experience of the Tuebingen Clinic from 1902 to 1916, inclusive. In all, 893 cases were observed, 725 of the cervix and 168 of the body of the uterus.

The inoperability percentage was 34.7 per cent. (257 cases), due, nearly always, to local extension of the growth. These are the cases in which operation being out of the question, any improvement in end-results due to radium is a gain. But it is not clear yet that we can expect anything except palliation, and in some cases, radiation seems to accelerate the course of the disease. Sometimes fistulas are produced, directly as a result of radiation.

The primary mortality varied greatly, from 37.9 per cent. to 8.7 per cent., the latter figure being for the last year (1916). The percentage for the whole series was 20.3. The causes of death were: peritonitis (50), pyelitis (12), pneumonia (7), embolus (10), anemia and cachexia (14). Against this must be noted the lack of primary mortality after radiation.

Graves[7] presents a summary of his personal experience in the treatment of cancer of the cervix with radium and by operation. The series of cases is not large, and he notes that it is not wise to draw comprehensive conclusions from limited material.

Graves says that in his experience not a single case of inoperable cancer has been cured by radium, although surprising and even startling temporary improvement and apparent cures were observed sometimes. Graves says, "In view of the uncertain and sometimes treacherous behavior of radium in the treatment of inoperable cases, we have not felt justified in substituting it for radical surgery in cases favorable for operation."

Although, in recent years, extensive statistical studies of the operative treatment of cancer of the cervix are less frequent than when the more extended operation was so enthusiastically received, the results are improving. The percentage of operability is apparently rising from getting cases earlier; the primary operative mortality is distinctly less (Graves 5 per cent., Cobb 5 per cent.), and the post-operative complications, or fistulas diminishing. Fistulas following operation are less frequent and more amenable to treatment following operations than after radium. The percentage of absolute cures is also apparently rising.

Graves does not minimize the difficulty of the abdominal hysterectomy, or the dangers. "But the days of reckless resection of ureters and bladders and vast bloody dissection of the pelvis are gone by. Surgeons now are adopting a saner conservatism, both in the choice of cases and in the technique of the operation. Hence the lower mortality, excellent convalescences, and freedom from disabling post-operative sequelae." It is too soon to tell what radium can accomplish, so until more adequate proof of its curative properties is produced, Graves prefers operation for cases in which the growth is apparently eradicable.

Okabayaski[8] describes the technic which he has developed and employed satisfactorily in a large number of cases of cancer of the cervix uteri. It is based on the technic of Takayama, described some time ago. His claims for it are: increased operability; increased ease of performance and just as much safety.

The abdominal route is employed. The patient is prepared as for any abdominal operation, except that the discharge from the cervix must be treated. Under local anesthesia, pantopon-scopolamine injections, the cervix is curetted, thoroughly washed out with soap and water, irrigated with 1-1000 solution of corrosive sublimate, or 1–100 lysol. Sixty per cent. alcohol is then poured into the vagina, which is swabbed out. The vagina is then packed with gauze wet with sixty per cent. alcohol. The anesthetic is hypodermic injection of pantopon with scopolamine hydrobromide, one and one-half hours after operation. Immediately before the operation, spinal anesthesia is given. If this proves unsatisfactory, or the effect wears off, inhalation anesthesia may be added.

Following free incision and packing back the intestines in the Trendelenburg position (not excessive), careful exploration is made to determine operability. Just what cases are operable, when it comes to consider border-line cases, cannot be determined except by experience. Okabayaski lays down no rules on this point.

For the many details of the technic, reference must be made to the original article, but the general plan of procedure may be noted here. It is to cut the infundibulo-pelvic ligaments, then the round ligament, cut the uterine artery as close to its point of origin as possible, and then attack the parametrium from *behind* and *below*. When the pelvic floor has been reached in this way on both sides, the bladder is then separated as far down as necessary. Then follows the division of the anterior and lateral parametrial and paravaginal tissue and division of the vagina. Finally, the enlarged glands are removed by blunt dissection. No effort is made to remove the glands with the uterus, in one piece.

No figures are given except those of Takayama, whose operability is given as 81.5 per cent. The operation is claimed to be less dangerous and more successful than the original Wertheim technic. But even with the lack of definite figures to support the author's contentions, the suggestion for this somewhat different method of approach of the really difficult part of hysterectomy for cancer, with excision of the parametrium, with little bleeding, is worthy of careful consideration.

CAUSE OF CANCER.

As long as the cause of cancer is unknown, investigators will continue the search for a possible microörganism, in spite of the evidence at hand which suggests that some other factor is the cause. Nuzum[9] has made a critical study of an organism associated with a transplantable carcinoma of the white mouse.

The results of Nuzum's careful bacteriological work on a certain type of mouse cancer (Crocker carcinoma No. 11) are the finding of a minute micrococcus, which will grow only under certain anaerobic conditions in special medium. The details of the technic need not be described in this review, but are given in the original article. This micrococcus was found so constantly that it suggested the possibility of some important rôle in the riotous overgrowth and lawless proliferation of the carcinoma cells.

"Injections of pure cultures of the organism subcutaneously in the breast tissues of mice have, in many instances, reproduced tumor nodules, which grow progressively for periods of ten to thirty days, and slowly regress in the majority of cases. Microscopic sections of such tumor nodules, removed at 24-hour periods, reveal a mass of newly formed tissue cells rapidly dividing, and supported by a newly formed stroma, which becomes vascularized.

"By stimulating the tumor cells to their maximal degree of virulence, either by incomplete surgical removal with recurrence of the tumor, followed by rapid passage through a series of mice of the same stock, or by injecting cultures of the organism into growing tumors, followed by transplantation, a method has been found whereby pure cultures of the organism have reproduced new growths.

"Subcutaneous injections of anaerobic cultures of the minute organism under these favorable experimental conditions, designed to exclude the probability of carrying over living cancer cells, have, in several isolated instances, led to the production of tumors which grew steadily, producing cachexia of the mouse. Histological studies have shown that these tumors do not vary in structure from the original growth known as the Crocker carcinoma No. 11. Transplants from the tumor growths produced by injections of the organism have yielded similar growths in 80 per cent. of a series of inoculated mice. The organism has been readily recovered from these experimental tumors.

"Inoculation of cultures into and adjacent to tumors appears to stimulate the growth and enhance the virulence of the tumor tissue in subseqent transplantation.

"In contrast to these observations, control injections of a limited number of cultures of staphylococcus aureus and albus, bacillus prodigiosus and streptococcus hemolyticus into normal mice have never, in the author's experience, reproduced tumor growth; abscess formation or septicaemia being the usual result.

"Furthermore, when active cancer cells are mixed with cultures of ordinary bacteria, inoculation in mice usually fails to give a 'take.'

"Finally, it should be clearly stated that the author makes no claim of having discovered the cause of cancer. The association of the minute microörganism with the cancer cells of the transplantable mouse carcinoma suggests that further careful study be made of this organism. While it is theoretically possible that living cancer cells may have been carried along in subcultures, the observations recorded suggest that two agents may be concerned in the etiology of this mouse carcinoma; the first agent being the minute coccal bodies stimulating the cells to rapid division, and second, the cancer cell itself closely associated with the organism and transmitting it from host to host in subsequent transplantations."

Intensive bacteriological studies are being made of a large number of human cancer patients, and the results will appear later.

FIBROIDS AND RADIATION.

Pfahler[10] writes, after 14 years' experience in the treatment of uterine fibroid and uterine hemorrhage by means of radium and x-ray. He considers in detail the theory of the effects of radiation, indications and contraindications for treatment by radiation; indications for use of x-ray alone, radium alone, and for the combined use of radium and x-ray; advantage and disadvantage of radiation; results and technic. On this last, he says, "the technique of radiotherapy, like that of surgery, cannot be accomplished in a few hours, nor a few days, nor even a few months. . . . One should be familiar with the principles of the physics of radium and the roentgen rays, and these principles should then be applied with skill, together with due knowledge of the pathology and of the clinical results and experience obtained by others and those obtained in simila cases. . . . I cannot urge too strongly the greatest attention to the minute details of technique." He closes his paper with the words, "In the hands of men who have investigated this subject thoroughly and have used radiation skillfully, the results have been brilliant, the patients have been enthusiastic, and there have been no regrets."

HEMORRHAGE FROM THE UTERUS AND RADIATION.

Jones[11] reports several series of gynecological cases treated with radium. In suitable selected fibroids of the uterus, the results are most satisfactory. The patient should not be less than forty years of age, because the menopause is likely to occur as a result of the treatment. In younger women, it often is desirable to pre-

serve the possibility of pregnancy. The tumor should not be large; if over the size of a three months' pregnancy, Jones prefers surgical treatment; pedunculated fibroids as well as the smaller intramural ones, when complicated by adhesions or tubal disease, are removed surgically. Diagnostic curettage, with careful microscopical study of the scrapings, always precedes the dose, and with adequate screening, the post-operative course, is generally without complication. The menstrual reaction varies with individuals. Some do not have any periods after treatment, while others have as many as three, the flow decreasing in amount.

The menopause precipitated is more acute than the normal one, but seems to yield rather readily to corpus luteum, or ovarian residue. Very little change can be detected in the size of the uterus before the end of the twelfth week, after which the contraction is rather rapid. Of 120 cases treated, 69.1 per cent. have been entirely relieved for over two years; 22.1 per cent. have been treated within so short a period that they may be classified only as improved; from 8.8 per cent. nothing has been heard.

In hemorrhage without obvious cause, organotherapy should be given a thorough trial before resorting to radium. The appropriate dose is very difficult to determine, as so many of these patients are in the child-bearing age, and patients vary markedly in their susceptibility to small doses of radium. Therefore small doses are indicated. In the bleeding of the menopause, radium is practically specific.

Of cases of cancer of the uterus, all that need be said is that, as sufficient quantities of radium are more easily obtainable now, the tendency has been to restrict the group for operation and enlarge the group for radiation alone.

The groups of cases reported in this article came under the observation of different physicians, and Curtis was especially interested in leucorrhea. Of sixty cases treated, thirty-six are cured; eleven are improving; ten are so recent as to be called doubtful. Three cases have not only been cured of the discharge, but have since become pregnant.

In recent years, the use of radium in the treatment of menorrhagia at the Mayo Clinic, has been increasing, and Stacy[12] gives the conclusions which now determine its applications.

In young women with fibroids causing menorrhagia, radium should be used only in carefully selected cases, and in small amounts in the initial treatment. The danger of bringing on the menopause is here to be feared. In general, abdominal myomectomy is preferable to radium in this group of cases. Pregnancy may occur after the application of radium, but in a small percentage of cases only.

Radium is the ideal treatment for menorrhagia in patients more than thirty-five, who have a fibrous type of uterus, or for patients who have small fibroids and menorrhagia.

In cases in which the history is suggestive of carcinoma of the fundus, an abdominal hysterectomy is the safe procedure, and should be advised even if the diagnostic curettement is negative for malignancy.

Unless there is a definite contraindication, large fibroids should be treated surgically, because of the possibility that the degenerative changes may occur in a tumor in which the blood supply has been interfered with, and because of the possibility of a mistaken diagnosis.

The study by Titus[13], of two hundred gynecological cases treated with radium at the Woman's Hospital (New York), is excellent on account of the clear method of presentation. Being itself a summary, it is difficult to condense, but indications, technic, dosage, constitutional reaction, symptomatic relief, effect on lesions, sequelae and ultimate results, are all considered. His conclusions in general confirm those of most other workers, and he closes with the statement that "radium may eventually remove carcinoma of the cervix from the domain of surgery."

CHORIOEPITHELIOMA.

The subject of chorioepithelioma has been set forth by Geist[14] on the basis of fourteen cases which came under his observation, and the results of his study represent some advance on the exhaustive investigations of Ewing, published in 1910. The general confusion Ewing tried to dispel by showing a correlation between the histological structure of the chorionic tumors and the clinical course, and pointing out the prognostic value of the microscopic appearance of the tumor. But there are too many cases that are "atypical," as indicated by the report of Ewing, and confirmed by Geist, to make decision generally easy.

A convenient summary may be presented as follows. There are at least two groups of tumors arising from the chorionic epithelium, included under the term "chorioepithelioma." The first, the so-called "typical chorioepithelioma," better called choriocarcinoma, consists of both cells of Langhans and syncytium, growing abundantly and lawlessly, invading the wall of the uterus and giving metastases freely. If villi are found they are not a part of the tumor, but a remnant of the pregnancy. The second is the so-called "atypical chorioepithelioma," better called syncytioma, consisting entirely of syncytial cells. The prognosis here is favorable; hysterectomy is indicated only by the clinical course, for example, if bleeding persists or is severe. Closely related to the syncytioma, histologically, is what Ewing has called "syncytial endometritis," but it is better called syncytial hyperplasia. It represents what

seems to be merely an abnormal reaction of the syncytium, does not form a true tumor, and spontaneously disappears. Between the first and the second named groups of true tumors, there are many varieties which, perhaps, are not clearly enough recognized yet to be called anything but "transition" stages. Histologically, the two kinds of epithelium are found, sometimes growing rather freely and lawlessly, sometimes rather regularly, and with villi which more or less approximate the normal type. Some of these are spoken of as "destructive placental polyps." It is in this group that diagnosis is most difficult from curettings or expelled material, and prognosis is doubtful from histological structure. The treatment, however, is hysterectomy, because it generally gives good results, and until we know more about the tumor, it seems wiser to take the risk of operation, which can be formulated, than the risk of fatal outcome from the tumor, which is still quite unknown.

In cases of clear-cut choriocarcinoma, early abdominal hysterectomy gives fair prognosis. In case of syncytioma, when abdominal hysterectomy is indicated by the clinical course, operation gives excellent results.

OÖPHORECTOMY.

Richardson[15] makes a vigorous plea for not removing the normal ovary with the uterus if the latter organ has to be taken out. It has been claimed that the ovary atrophies after hysterectomy and that ovarian function ceases. But Richardson says "from subsequent gross and microscopic studies of ovaries retained after hysterectomy, it has been shown that when degeneration occurs, it is to be attributed either to associated ovarian disease or to a damaged ovarian circulation, or to both of these factors.

"Through numerous experimental studies, the theory of an essential physiological interrelationship between the uterus and the ovaries has been completely demolished, and it has been conclusively demonstrated that ovarian function, except in so far as it operated upon the uterus, may proceed uninterruptedly after hysterectomy.

"The danger to the ovarian circulation is tremendously increased through removal of the Fallopian tubes along with the uterus, and where this is necessary, every possible care should be exercised to stick close to the tube and neither to clamp or ligate a single millimeter of the mesosalpinx beyond what is absolutely required. Failure to appreciate this anatomical fact is undoubtedly responsible for a large percentage of degenerated ovaries following hysterectomy."

If hysterectomy is performed with due regard to that part of the ovarian circulation which need not be disturbed, the ovary will not degenerate as a result of the operation, and no untoward effects will ensue. The value of the ovary in the endocrine system is too great to permit its removal except for definite diseased conditions.

Although the question of whether normal ovarian tissue should be left in the body when the uterus is removed before the menopause is not settled to the satisfaction of all operators, the weight of opinion is that the ovary has a function apart from reproduction, and that its value in the body economy is sufficient to overbalance the possible dangers from postoperative changes if it is not removed. Hawks[16] reports a series of cases followed up after hysterectomy for fibroids, and his views coincide with those just stated. An interesting detail in his report is that in one patient operated on for incisional hernia after hysterectomy, a recent corpus luteum was found in the ovary. The patient had had some flushes, but the microscopical diagnosis was clear. It indicates that ovulation may persist for two years after hysterectomy, but of course throws no light on the chemical changes which may have occurred in the internal secretion of the organ.

Ochsner[17] presents the following hypotheses as a result of his consideration of data presented by veterinarians with reference to the cow, supported by some observations of his own on human patients.

(1) An unabsorbed false corpus luteum prevents ovulation and is a common cause of sterility, and the expression or excision of such a false corpus luteum invariably brings on menstruation.

(2) The excision or rupture of a true corpus luteum invariably results in interruption of pregnancy, at least during the early months of pregnancy, and it may be looked upon as a common cause of abortion.

(3) An injury to either the true or false corpus luteum may simulate ruptured extrauterine pregnancy.

It is the suggestion that injury to a true corpus luteum is a common cause of abortion that is especially interesting, and it is something which ought to be kept in mind always by surgeons, during abdominal or pelvic operations on pregnant women. There are a number of points about the cause of so-called spontaneous abortion which are by no means clear, and even in cases where an obvious cause is present, the mechanism is by no means clear. Why, for example, should a fall, not very severe, perhaps be followed in three or four days by miscarriage? The problem is well worth experimental investigation.

OVARIAN CYSTADENOMA.

Erdmann and Spaulding[18] present a study of the papillary cystadenoma of the ovary. It is a careful review of some aspects of the sub-

ject as presented in the literature, supplemented by the experience of the authors. They summarize their conclusions as follows:

1. Papillary cystadenoma is the most important surgical disease of the ovary.

2. It is variously stated to occur in from 10 to 27.5 per cent. of all ovarian tumors.

3. A large number of cases occur in patients under the age of thirty.

4. The most probable development is from cellular perversion of the germinal epithelium.

5. There is a strong tendency to bilateralism (22.2 per cent.) and local metastasis. General metastasis is not rare.

6. Bilateral ovarian tumors demand a careful examination of the abdominal viscera and breasts.

7. The absence of symptoms referable to the pelvic organs is a deceptive feature of the disease.

8. Ascites is an advanced symptom and indicates rupture, peritoneal metastasis, and often malignancy.

9. Every woman with ascites, without a sufficient explanation in the liver, heart, peritoneum, or kidneys, should be laparotomized, even though bimanual examination be negative.

10. Microscopically 66.6 per cent. of papillary cystadenoma are cancerous or precancerous.

11. Every ovarian cyst must be removed intact by abdominal section as soon as discovered.

12. In unilateral oöphorectomy, the patient should be periodically examined.

13. Careless or rough handling resulting in intra-abdominal rupture, tapping to reduce the size of the tumor and the vaginal approach, cannot be too strongly condemned.

14. Radium should be employed in cases in which the ovaries or the peritoneal implants could not be surgically removed.

Miller and Viko[19] report an unusual case of papillary adenocystoma of the ovary. As with many growths of this type, the outcome was fatal, extensive involvement of intra-abdominal organs and some metastases. The course was over five years, but accumulation of fluid in the chest within a year of the beginning of symptoms indicated pleural metastasis. The peculiarity of the case from the anatomical point of view, was the deposit of lime in the tumor and some of the metastasis giving the psammocarcinoma or malignant sand tumor. From the clinical point of view, the striking feature was the number of tappings performed: left side of the chest, 603; right side of chest, 259; abdominal, 20. The estimated fluid withdrawn totalled 600,000 c.c.

McClellan[20] reviews some of the literature on ovarian dermoids and reports a case. He emphasizes the possible value of the x-ray in making preoperative diagnosis, especially if the bladder be filled with air, to get a better background for control.

PUDENDAL HERNIA.

Grattan[21] describes a case presenting an unusual type of hernia, of interest from its rarity and difficulty of cure. He uses the term "pudendal" as somewhat similar cases have been described under this title, but points out the inappropriateness of the appellation. The patient, a woman of 53, complained of irritation in the rectum with difficulty in moving the bowels, and, in addition, a bearing-down sensation in the vagina. She had been through three pregnancies, including a difficult twin delivery, with loss of one of the twins as a result of the protracted labor. Local examination at first showed nothing abnormal,—no descensus of uterus, no cystocele, no rectocele, no hemorrhoids, nor prolapse of rectum. Repeating the examination and having the patient cough and bear down repeatedly, a definite impulse in the adductor region of the left thigh was detected. A mass also was made out, which was reducible upward with gurgling. The course of the hernia could not be made out.

Abdominal operation was performed, under difficulty, as the patient was obese, and an easily reducible loop of sigmoid found to pass through a triangular opening in the pelvic floor. Probably the rent in the levator had occurred during the difficult twin labor.

Extirpation of the sac was not attempted, and with "great effort and difficulty" the triangular opening was closed with mattress sutures of double Pagenstecher linen. A continuous suture was passed over the mattress sutures and the sigmoid was anchored at the pelvic brim and again about two inches higher. Two years after operation the patient was free from the symptoms of which she had complained, and there was no sign of recurrence.

COMPLETE LACERATION OF PERINEUM.

Watkins[22] reviews some of the important steps of the development of the operation for old complete laceration of the perineum, noting contributions of Warren, Kelly and others. He describes also the technic which he himself now uses, combining features of older methods, but emphasizing two points especially. The first of these is the formation of a flap (Tait) or pulling down the rectum if necessary (Noble), so that no suturing of the rectal wall is necessary. The second point is that the sphincter muscle is not dissected free and sutured individually. In any case, the union is by connective tissue, and the trauma of dissecting out and making traction on the muscle itself is likely to prevent satisfactory healing.

Attention to these points will give improved

results, according to Watkins, comparable to operations for incomplete laceration.

TUBERCULOSIS OF THE VAGINA.

Cullen[23] reports a case of tuberculous ulcer of the vagina. There was evidence of "well resisted parenchymal tuberculosis" of the lungs. Abdominal operation for a small ovarian cyst showed evidence of slight tuberculous disease of head of cecum only. Pelvic structures were without sign of tuberculosis. There was no evidence of tuberculosis of the uro-genital system of the husband, though he has pulmonary tuberculosis.

In the vagina, on the anterior wall, was a punched-out ulcer 6 x 4 cm. in diameter. Microscopical examination of sections from the wall of the ulcer show tuberculosis. The origin of the vaginal infection seemed to be hematogenous. Since radium and x-ray treatment of the ulcer produced no appreciable improvement in four months, the ulcer was resected, but about six weeks after complete healing of the somewhat broken-down wound of operation, tuberculosis of the vagina was again discovered, and was treated, with improvement, by the Kromayer light.

SILVER WIRE IN BLADDER FISTULAS.

Eastman[24] emphasizes the value of silver wire as *the* suture material for closing vesico-vaginal fistulas, because some authorities do not acknowledge its supremacy. Realizing that his opinion had no experimental basis outside of his clinical work, he carried on some laboratory investigations, making Petri dish tests with bacteria and several kinds of suture material. The result of these was to indicate that under Petri dish conditions, silver wire was less bactericidal than any other suture material he used. The opinion that silver wire is the best suture material for fistula operations is supported by so much clinical evidence, however, that the surprising results of the laboratory experiments must be regarded as another illustration of the danger of drawing conclusions for the body from experiments which do not reproduce vital conditions.

LEUCORRHEA—OPERATION.

Discharge from the cervix, constituting one form of leucorrhea, may be a very troublesome symptom, and difficult to remove. Infection of the deep-lying glandular tissue is the underlying cause of the persistence of the discharge, and the most efficacious method of treatment is to remove the infected tissue. Palliative methods generally give but slight satisfaction.

Mathews[25] recommends a slight modification of Sturmdorf's "cone excision" of the cervix, removing a cone of cervical tissue from the vaginal portion to, or almost to, the internal os. A special stitch described by Sturmdorf is then used to draw up the vaginal mucous membrane into contact with the remnant of cervical epithelium.

The results compare favorably with those following amputation of the cervix, as far as relief of symptoms is concerned. Whether complications regarding conception and child-bearing as serious as following amputation of the cervix will ensue, has not been determined as yet, but from the patients delivered after the "cone excision," a limited number as yet, it seems as if there would be little if any more trouble than following trachelorrhaphy. In the view of the author, "cone excision," rather than amputation, is the best method for eradication of the infected area.

LEUCORRHEA—CAUTERY.

In certain cases of eversion of the cervix, the method of using the Paquelin cautery (Hunner) has proved very satisfactory. Superficial linear cauterizations are made, and as these heal, the eversion tends to become smaller, sometimes disappearing.

Dickinson[26] suggests an improvement, employing the delicate cautery used in the nose. The instrument is smaller and therefore has greater elasticity of application. It may be used easily in the office, and no anesthetic is required. It is less likely to produce excessive burning, and in many cases provides a successful substitute for operation.

CONDYLOMA OF THE CERVIX.

Wharton[27] reports a case of gonorrheal condyloma of the cervix, on account of the great rarity of the condition. He presents a review of the very brief literature on the subject. He cites two distinct types of cervical condyloma, the gonorrheal and the tuberculous, either of which may be confused with malignant growth of the cervix. Gonorrheal condylomata are generally found with or soon after pregnancy, are associated with other signs of gonorrhea, and have a good prognosis. The local growth may be removed, but the focus of infection should be cleaned up.

Tuberculous condyloma of the cervix is almost always accompanied by other manifestations of the disease, and thus operative treatment should be undertaken only after a careful study of the lesions. The prognosis depends on the concomitant lesions.

PELVIC ABSCESS.

Attention should be called to the comprehensive analytic study by Wharton[28] of pelvic abscess in the female. For many interesting details, reference must be made to the original article, in which a historical account is included. The technic of vaginal incision and drainage is described in detail.

"From this summary it is not difficult to determine the proper rôle of this operative pro-

cedure in the treatment of pelvic abscess and the purulent forms of pelvic inflammatory disease. As a measure of expediency, it undoubtedly saved lives, and makes it possible to avoid many a hazardous abdominal operation under extremely unfavorable circumstances. As a conservative surgical procedure in itself, its use has resulted in permanent relief in 25 per cent. of all cases, and for this reason, if for no other, should always be tried in every case of pelvic abscess that is amenable to this form of treatment. In the majority of instances, however, it has proved to be but the first step in the safest and most conservative method of obtaining permanently good results in the treatment of patients with pelvic abscess. In view of our findings in this series of observations, we are compelled to admit that as a curative procedure, vaginal incision and drainage is, in the majority of instances, a failure, but when considered and used as a measure of expediency, to be followed when necessary by the employment of more radical procedures, it has a definitely indicated use and fulfills an important function in the conservative operative treatment of pelvic abscess and the purulent forms of chronic pelvic inflammatory disease."

Emge[29] has called attention to the subject of varicose veins in the female pelvis, which for some time has received little mention in gynecological literature. His conclusions, based on a study of thirty-five cases in his own experience, he states as follows:

Varicose veins of the broad ligament in general, and of the ovarian circulation in particular, are comparatively common occurrences in women. "The symptomatology is plain enough in most uncomplicated cases to suggest their presence. The diagnosis is, in most instances, made certain by rectovaginal examination in the recumbent, alternating with the sitting position. The differential diagnosis is aided by the normal leucocyte count. Mild and early cases can be permanently relieved by conservative measures. The resection of the veins, or more so, hysterectomies, is unnecessary to accomplish a cure. A high suspension of the uterus, with a shortening of the uterosacral ligaments, offers the best means for a permanent symptomatic cure, with a possibility of a permanent anatomical regulation."

He shows two tables: the first summarizing symptoms and probable causes of the varicose condition of the veins; the second summarizing the preoperative diagnosis, the findings at operation and the operation and its after-results.

The important significance of Emge's study is that he calls attention to the mechanism of the production of certain symptoms in certain cases of pelvic diseases: one of the causes of discomfort in retrodisplacement of the uterus, for example, is the distention of the veins of the broad ligament produced by obstruction; for reflux through the soft veins is prevented by slight compression.

TEST OF PATENCY OF TUBES.

An accurate knowledge of the anatomic patency of the tubes is admittedly important in formulating prognosis and therapy of female sterility. It is well to remember, as Giles states, that practically 11 per cent. of female sterilities is due to tubal disease. Adding the Fallopian tubes closed by peritonitis gives an average incidence of 15 per cent. of cases of sterility due to pathologic tubes.

A method for determining the patency of the tube without exploratory laparotomy is described by Rubin[30]. Oxygen is introduced into the uterus under slight pressure; at first, sufficient oxygen was employed to give easily detected distention. But fluoroscope examination will detect much smaller quantities of oxygen, so that on an average 150 c.c. was employed later. The details of the simple technic are described by Rubin.

The method is safe, easy of application and apparently adequate. It is contraindicated in the presence of any acute or subacute pelvic infection, and in the presence of any "purulent diseased bartholinian glands, urethra, vagina or cervix."

The method is indicated:

1. In all cases of primary sterility in which all factors except that of tubal disease may be excluded. Here it has definite prognostic as well as diagnostic value.

2. In cases of primary sterility in which the patient is known to have passed through a pelvic infection of gonorrheal origin.

3. In cases of primary sterility in which the patient had peritonitis of appendicular origin.

4. In cases of relative sterility in which the patient had a pelvic infection following childbirth or abortion, particularly when induced.

5. In cases of one child sterility, without the definite history of pelvic infection.

6. In cases in which it had been necessary to remove one whole tube and part of another for hydrosalpinx or pyosalpinx (conservative surgery).

7. After unilateral ectopic pregnancy, to determine the patency of the residual tube.

8. After cases of salpingostomy for the cure of sterility of tubal origin, to demonstrate the success of the operation which was calculated to effect open tubes.

9. After sterilization by tube ligation, to test the patency of the tied or severed tubes.

10. After multiple myomectomy, to make certain that at least the uterine ostium of the tube has been left intact.

PERITONEAL INFLATION.

Peterson[31] has tested the method of peritoneal inflation and x-ray as an aid in gynecologic and obstetric diagnosis. Employing the procedure only under stress of persuasion and with some prejudice, he has become convinced of its simplicity and safety, and then of its value. The results of his experience with over 150 inflations, he summarizes as follows:

1. The uterus, together with the tubes and ovaries, can be clearly shown by pneumoperitoneal roentgenography.

2. Owing to their distention with gas, the tubes are rather more clearly demonstrated by the x-ray where inflation has been brought about through the transuterine route than where the inflation has been made transperitoneally.

3. On account of the rapid absorption of the carbon dioxide gas, with quick subsidence of the discomfort produced by the inflation, this gas should be used in preference to oxygen, which is very slowly absorbed.

4. Irregularities of the uterus, omental and bowel adhesions are clearly demonstrated by the pneumoperitoneal x-ray.

5. In not a few instances the diseased and enlarged appendages are more clearly made out by pelvic roentgenography than by the most careful and searching bimanual examination, even under anesthesia.

6. With the improved position (knee chest and Trendelenburg) smaller and smaller quantities of gas will be necessary for inflation. Thus discomfort will be reduced to a minimum.

7. If the technic of pelvic roentgenography be good, retention of the bowel coils in the pelvis will be proof of adhesions.

8. The pneumoperitoneal x-ray is able to demonstrate pregnancy at a much earlier period than is possible by the examining finger.

9. With good technic and good judgment in the selection of cases, both transuterine and transperitoneal gas inflation are free from danger.

10. Bimanual pelvic examination and pelvic pneumoperitoneal roentgenography are not antagonistic diagnostic methods. Each is valuable, and their value is enhanced if they be used in conjunction, each acting as a check upon the other.

MISCELLANEOUS.

Hewitt[32] has evolved a technic for sterilization of the skin for operation which is satisfactory in most cases (not applicable to the face). He claims for it all the advantages of iodine and none of its disadvantages. Experimental tests were made extensively, and comparisons with other antiseptic solutions which also were standardized. The method finally adopted is as follows: If the patient enters the hospital twelve hours before operation, the operative field is shaved, scrubbed with soap and water, and a thin, sterile dressing applied. In emergency cases, the preliminary preparation consists of a dry shave. In either case, immediately before operation, the field is scrubbed with ether for three minutes, followed by picric acid solution, for three minutes.

The picric acid solution is six per cent., namely, a saturated solution in 70 per cent. ethyl alcohol. The only disadvantage of this method is the stain, which cannot be removed if it has been on for an hour. Twenty-five per cent. solution of ammonia in ethyl alcohol, or 5 per cent. solution of carbonate of soda, will take it off if applied early.

Cultures from all wounds which had any discharge at all, thirty-one in two hundred and sixty-nine, showed eight infections, which compares favorably with results in other clinics.

Some one has said that in medicine, a good result may be an accident, a bad result proves inadequate treatment. If we will, we can learn more from our failures and mistakes than from our success. Peterson[33] emphasizes the ease with which errors in gynecologic diagnosis can be made, reporting five cases of misplaced organs which were at first unrecognized. No fatal result followed the error, but such occurrences are humiliating, and Peterson's account of his experiences should be read and pondered by every physician. It illustrates the old adage, "More mistakes are made by not looking than by not knowing," because in every case the correct diagnosis could have been made easily, if systematic and thorough examination had been employed.

REFERENCES.

[1] Frankl and Amreich: Surg. Gynec. and Obst., 1921, August, Vol. xxxii, p. 162.
[2] Burnam, C. F.: New York State J. M., 1920, xx, 316.
[3] Stone, William S.: Surg. Gynec. and Obst., 1921, June, Vol. xxxii, p. 509.
[4] Kohlman, William: Surg. Gynec. and Obst., 1921, August, Vol. xxxii, p. 158.
[5] Taussig, Frederick: Am. J. O. and Gyn., 1920, November, Vol. 1, p. 113.
[6] Mayer, A.: Zentralbl. f. Gynaek. 1920, xliv, 617.
[7] Graves, William P.: Surg. Gynec. and Obst., 1921, October, Vol. xxxiii, p. 504.
[8] Okabayaski, H.: Surg. Gynec. and Obst., 1921, October, Vol. xxxiii, p. 335.
[9] Nuzum, John W.: Surg. Gynec. and Obst., 1921, August, Vol. xxii, p. 167.
[10] Pfahler, G. E.: New York State J. M., 1920, xx, 321.
[11] Jones, Harrold O.: Surg. Gynec. and Obst., 1921, October, Vol. xxxiii, p. 409.
[12] Stacy, I.: Am. Journal Roentgenol. 1920, n. s., vii, 379.
[13] Titus, . W.: Am. Jour. Obst. and Gynec., 1921, April, Vol. 1, p. 685.
[14] Geist, Samuel H.: Surg. Gynec. and Obst., 1921, May, Vol. xxxii, p. 427.
[15] Richardson, E. H.: South. M. J., 1920, xiii, 595.
[16] Hawks, E. M.: Am. Jour. Obst. and Gynec., 1921, June, Vol. 1, p. 959.
[17] Ochsner, E. H.: Surg. Gynec. and Obst., 1920, xxxi, 496.
[18] Erdmann, John F., and Spaulding, Harry V.: Surg. Gynec. and Obst., 1921, October, Vol. xxxiii, p. 362.
[19] Miller, Richard H., and Viko, Louis E.: Surg. Gynec. and Obst., 1921, January, Vol. xxii, p. 59.
[20] McClellan, Benjamin Rush: Am. Jour. Obst. and Gynec., 1921, February, Vol. 1, p. 493.
[21] Grattan, James Francis: Surg. Gynec. and Obst., 1921, February, Vol. xxxii, p. 131.
[22] Watkins, Thomas J.: Surg. Gynec. and Obst., 1921, April, Vol. xxxii, p. 360.

[23] Cullen, Ernest K.: Surg. Gynec. and Obst., 1921, July, Vol. xxxiii, p. 76.
[24] Eastman, J. R.: J. Indiana M. Assoc., 1920, xiii, 393.
[25] Mathews, Harvey Burleson: Surg. Gynec. and Obst., 1921, March, Vol. xxxii, p. 249.
[26] Dickinson, Robert L.: Am. Jour. Obst. and Gynec., 1921, December, Vol. II, p. 600.
[27] Wharton, Lawrence R.: Surg. Gynec. and Obst., 1921, August, Vol. xxxii, p. 145.
[28] Wharton, L. R.: Arch. Surg., 1921, ii, 246.
[29] Emge, Ludwig A.: Surg. Gynec. and Obst., 1921, February, Vol. xxxii, p. 133.
[30] Rubin, I. C.: Jour. Am. Med. Assoc., 1920, lxxv, 661.
[31] Peterson, Reuben: Surg. Gynec. and Obst., 1921, August, Vol. xxxiii p. 154.
[32] Hewitt, H. W.: Am. Jour. Obst. and Gynec., 1921, April, Vol. 1, p. 672.
[33] Peterson, Reuben: Am. Jour. Obst. and Gynec., 1920, November, Vol. 1, p. 170.

LEGISLATIVE MATTERS.

House 601. Bill relative to the physical examination of pupils in the public schools has received an adverse report, which has been accepted by the House.

House 495. Bill providing that children in private schools shall comply with the requirements for vaccination as now in force for children attending public schools, has received the support of the Committee on Public Health in redrafted form defining private schools. This is one of the constructive proposals of the year. It will be bitterly opposed. Physicians know the importance of this measure, and if active personal work is done throughout the State, its passage could be secured. Legislators will vote for it if the benefits are explained. It is a public health measure and has economic importance. It costs money to control a smallpox outbreak.

House Bill 639 has received the support of the Committee on Agriculture under the following resolve: "*Resolved*, That the department of agriculture is hereby directed to investigate the shipping and sale at wholesale and retail of milk and cream by contractors or dealers, and such other matters as are contained in house bill number six hundred and thirty-nine of the current year, and to report to the next General Court, not later than the second Wednesday in January, on the feasibility and expediency of licensing such contractors and dealers."

The Department of Public Health will have further authority under the following resolve, if adopted: "*Resolved*, That the Department of Public Health be authorized to continue the investigation, provided for by chapter nine of the resolves of nineteen hundred and twenty, and further provided for by chapter forty of the resolves of nineteen hundred and twenty-one, relative to the advisability of revising and codifying the rules, regulations and ordinances of the various cities and towns of the Commonwealth concerning plumbing, house drainage and like subjects. Report thereon shall be made to the General Court not later than the second Wednesday in January, nineteen hundred and twenty-three."

Senate Bill 360, for establishing a Child Welfare Commission in the City of Holyoke, provides for the creation of a milk station and one or more modification laboratories to provide pure, pasteurized and formulated milk for infants, and also to give prenatal and post-natal advice relating to the care of children, and provision is made for the employment of physicians, nurses, and assistants. This is a very important matter. One may question whether the specification of pure, pasteurized and formularized milk is a wise provision. If that should be changed so that the commission could provide such food as may be designated by the physician in charge, there would be wider latitude. Some children need something besides milk, essential though that food may be. The problem of feeding of children may be better understood in the future, and the commission should not be hampered. If the bill is enacted, Holyoke may be able to set an example for other cities and towns. The spirit behind this movement is very commendable.

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH.

"THE objects of said corporation shall be to conduct, assist, and encourage investigations in the sciences and arts of hygiene, medicine, and surgery, and allied subjects, in the nature and causes of disease, and the methods of its prevention and treatment, and to make knowledge relating to these various subjects available for the protection of the health of the public and the improved treatment of disease and injury." Charter of the Rockefeller Institute for Medical Research (1901).

The report of the Rockefeller Institute, published last year, states concretely what is being done to carry out the purposes of the founder. The Institute is divided into three departments: The General Laboratories, the Hospital, and the Department of Animal Pathology. At the head of the General Laboratories is Dr. Simon Flexner. The work is conducted under the following divisions: Pathology and Bacteriology, Chemistry, Experimental Surgery, General Physiology, and Biophysics. The Department of the Hospital, under Dr. Rufus Cole, is at present engaged in investigations in Infectious Diseases, Cardiac Diseases, and Metabolic Diseases.

These two departments are housed in three buildings situated in New York City. The Department of Animal Pathology, under Dr. Theobald Smith, is located near Princeton, N. J.

The results of the activities of the Institute are published in a series of studies. Three or four volumes appear every year and may be purchased for $2 per volume.

THE BOSTON
Medical and Surgical Journal
Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

For three years JAMES S. STONE, M.D.
HORACE D. ARNOLD, M.D.
CHANNING FROTHINGHAM, M.D.
For two years HOMER GAGE, M.D., *Chairman.*
EDWARD C. STREETER, M.D.
EDWARD W. TAYLOR, M.D.
For one year WILLIAM H. ROBEY, JR., M.D.
ROGER I. LEE, M.D.
ROBERT B. OSGOOD, M.D.

EDITORIAL STAFF.
DAVID L. EDSALL, M.D.
WALTER B. CANNON, M.D.
REID HUNT, M.D.
ROBERT W. LOVETT, M.D.
EDWARD H. NICHOLS, M.D.
FRANCIS W. PEABODY, M.D.
JOHN P. SUTHERLAND, M.D.
S. BURT WOLBACH, M.D.
GEORGE R. MINOT, M.D.

WALTER P. BOWERS, M.D., *Managing Editor.*
GEORGE G. SMITH, M.D., *Assistant Editor.*

SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States. $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. *Orders for reprints must be sent to the printer with galley proof of paper. Upon written request, authors will be furnished free one hundred eight-page reprints, without covers, or the equivalent in pages in articles of greater length.*

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

THE DEVELOPMENT OF SCHOOLS OF TROPICAL MEDICINE.

TROPICAL medicine has long been regarded as a special field for post-graduate study in medicine because the curricula for the usual medical degree are too crowded to permit the inclusion even of an outline of this subject. Moreover, those who, as army physicians, health officers, practitioners or medical officials of private corporations, are called upon to practise medicine or to prevent disease in the tropics, require far more than a superficial knowledge in this special field. In tropical medicine, as in other clinical branches of medicine, a well-rounded knowledge of general medicine is an indispensable prerequisite, but above all, broad and sound fundamental training is important for tropical medicine, because of the comparative scientific isolation and the consequent resourcefulness required of the individual when put to the test under conditions often prevailing in the tropics.

The subject of tropical medicine very naturally has reached its highest development as an important branch of medicine in the countries having the largest colonial interests. The need for opportunities for post-graduate study in tropical medicine was realized so fully in England twenty-five years ago, that Mr. Joseph Chamberlain, then Secretary of State for the Colonies, is said to have been instrumental in the establishment of two schools of tropical medicine, namely, that of Liverpool, founded in 1898 and opened in 1899, and that of London, founded in 1899 and opened in the same year.

Most of the success and influence of the London school was due to the untiring efforts and wide reputation of Sir Patrick Manson, whose name is inseparably connected with this school and who served it from the time of its foundation until his retirement.

The Committee of Management of the Seamen's Hospital Society, making use of funds raised privately for the purpose, established the school in connection with their hospitals near the London Docks. Owing to rapid growth of the school in its first ten years, further sums were raised for its support, and immediately after the Great War, the school moved to improved quarters on Euston Road, London, where the offices, laboratories, library, museum and hospital were all accommodated under one roof. The hospital and laboratories were given by the British Red Cross and the Order of St. John, and more than £100,000 were raised by an appeal to the public. When one considers the enormous financial burdens assumed by Great Britain during the war, the raising of so large a sum, at such a time, has great significance.

The primary object for which the school was started was to afford adequate special training in tropical disease to medical officers of the Colonial Service, but from the first, the school was thrown open to all physicians qualified for practice, and was used by medical missionaries and practitioners of medicine intending to establish themselves in tropical countries.

The University of London recognized the importance of tropical medicine by making it one of the six medical branches in which it was prepared to confer the degree of M.D.

The usual medical degree in England is the M.B. The M.D. is not a requisite for qualification to practise, and can only be obtained by additional training, such as is given in this country in graduate schools of medicine.

The Liverpool School of Tropical Medicine, a year after it was started, was authorized officially to provide the obligatory course for Colonial medical officers proceeding to tropical countries. The objects and methods of this school were much the same as those of the London school. They have been set forth as follows:

1. "To give a practical training to medical men proceeding to the Tropics, in the special subject of tropical diseases, or to enable them to familiarize themselves while on leave, in a practical manner, with the results of the most recent research in all branches of tropical medicine."

2. "To conduct original researches into tropical diseases."

3. "To organize prophylactic measures against tropical diseases."

The London school emphasized as an object the teaching of physicians to observe, to record, and to study patients scientifically, because in the tropics a man must depend upon himself.

The Liverpool school now has a research center maintained in continuous operation at Manaös, on the Amazon River.

The Institut für Schiffs-und Tropenkrankheiten was founded in Hamburg in 1900, in response to a demand emanating from the overseas interests and shipping of the city. Because Berlin was not a seaport and could not advantageously give instruction in tropical diseases, the German Government contributed, not only funds to the Institut in Hamburg, but also a certain number of salaried medical officers to assist in the work. The City of Hamburg provided hospital and laboratory facilities, the Navy contributed funds and a salaried assistant, and the Army another salaried assistant. The official physician of the port became the first Director of the Institut, and the office for medical officials of the port was installed at the Institut.

A short course on ship-hygiene and quarantine for ship's physicians, and a fuller course on tropical medicine suitable for medical officers of the Army and Navy, and for medical officials of the colonies, were offered.

Growth of the project required a considerable enlargement of facilities after six years, and at that time a zoölogiel laboratory, under a separate director, was established in connection with the Institut. Instruction in, and study of the protozoal diseases of animals, was recognized from the beginning, as important for the proper understanding of similar diseases of man. A second enlargement was required only ten years after the founding of the Institut, its growth having been more rapid than that of either of the English schools.

A large, new building, a new hospital, and an animal house, standing near together, were constructed at that time. The main building had 158 rooms, of which 45 were laboratories providing accommodation for 103 workers. The hospital had space for 60 or 70 beds, of which 40 to 50 were in use in 1914.

The scientific staff consisted, in 1914, of a director and six associates, four helpers, four physicians of the Colonial Service, one assistant physician, two medical practitioners, and one volunteer worker.

The animal house provided ample accommodation for horses and cattle, as well as for monkeys and the smaller laboratory animals.

A school of tropical medicine has been started recently at Rotterdam. It provides a course for physicians proceeding to the colonies, and another for medical students.

In Brussels, too, there is a school of tropical medicine, which was started a few years ago. One of its objects is to train medical men for service in the Belgian Congo. This school has a very fine collection of tropical material in its museum.

Although it might seem logical to establish schools of tropical medicine in the tropics, by preference, no such school has, until very recently, been opened. On the contrary, the older and best-known schools are in northern latitudes.

There are several reasons for conducting teaching of tropical medicine in temperate regions. First: more work can be done with less effort where the climate is favorable; second: wherever the school may be situated, much of the material used for laboratory instruction must, in any case, be brought from distant places, because there is no single locality in which are found all the diseases to be studied; third: a school of tropical medicine which is so situated that it can obtain the coöperation of a great variety of highly trained medical specialists, such as are gathered together only at the leading schools of medicine, can offer, at reasonable expense, a far more attractive course to its students than would otherwise be possible.

A pamphlet has just come to hand announcing the establishment of a school of tropical medicine at Calcutta. This school owes its existence to Sir Leonard Rogers, who, for a period of ten years, has been working for its establishment. This school is to be staffed by a director and assistant director, nine professors, eight assistant professors, and several lecturers and assistants. In addition to its teaching, the school will conduct research in six fields of tropical medicine, under the direction of different men appointed especially for the work in each of these fields.

It is understood that another school on similar lines is being organized in Bombay.

In the United States, for some years, lecture courses in tropical medicine have been given at a number of centers of medical instruction, and three attempts have been made to establish schools of tropical medicine. Of these efforts, that of Harvard University has met with by far the greatest degree of success.

This school was inaugurated in 1913, under the direction of Dr. Richard P. Strong, and has been continuously in operation since that time. It has given instruction to officers of the Army, the Navy, and the Public Health Service, as well as to private physicians of this and of many other countries. A number of important expeditions for research in tropical countries have likewise been organized by the school.

However, the need has been felt for a station in the tropics where scientific work in the subject requiring a tropical environment for its successful prosecution could be carried on continuously and where students of the school could obtain a wider practical experience in the diagnosis and treatment of tropical disease. Through an affiliation with the Gorgas Memorial Institute, soon to be established at Panama, it seems likely that this need of the Harvard School will be met in the near future.

A Service of Tropical Disease has been inaugurated at the Boston City Hospital, with the object of providing a center for the diagnosis and treatment of tropical diseases, and this Service is likewise affiliated with the School for Tropical Medicine, enabling it to get into direct touch with patients, and to obtain material for study here in Boston.

There being, in this country, no other center offering instruction in tropical medicine, such as is provided at Harvard, and no other hospital service in the United States devoting itself exclusively to tropical disease, it may not be too much to hope that Boston will become recognized as a center for the study and treatment of tropical disease, and that it may attract patients from all over the country, as it already attracts students of tropical medicine.

Situated, as it is, in about the same latitude as Rome, Boston is much nearer to the tropics than are the schools of England or of Europe.

With regard to the expected development of foreign commerce, both national and local, the prospects for rejuvenation of our merchant marine, and the closer and more frequent contacts with tropical countries, which will inevitably result, it would seem that the demand for instruction in tropical medicine must increase, and that the necessity for providing for it adequately, in this country, will become more widely recognized than it is today.

CONSTRUCTIVE ACTION BY THE AMERICAN MEDICAL ASSOCIATION.

AT a symposium on the A. M. A., before the North Side Branch of the Chicago Medical Society, February 2, 1922, Dr. Horace M. Brown of Milwaukee, President-Elect of the Tri-State District Medical Association, spoke of the unrest and dissatisfaction in the medical profession due, as he thought, to indifference of the officials of state societies in looking after the interests of the general practitioner. He elaborated the difficulties encountered by the young practitioner and blames the clinical groups in hospitals for the control of cases, leaving very little for the unattached doctor. He also claims that the emotionalism of the day, as shown by the activities of the epicene (under the definition of the fat-thighed man and skinny hipped woman), has antagonized medical practice by propaganda for reform and uplift theories, so that the young man is advised to enjoy the "beauty of service" without expectation of material reward. The result is that young men are not joining the medical societies but rather floundering about in a limited and unproductive field.

The next subject considered is the dissatisfaction with the A. M. A. He contends that the rank and file of the profession feel that they are neglected by the A. M. A.; that the delegates do not serve the state or county medical societies or the individual members; and after spending all this time in presenting his impressions of the attitude of the members of the profession, he leaves the subject with the request that Dr. Alexander R. Craig, Secretary of the A. M. A., should answer and explain how the A. M. A. "can utilize its enormous influence for the benefit of its more humble but component members." Dr. Craig's reply is not printed in full, but the abstract seems to show that he simply gave a history of the Association and explained the functions of the various councils, the House of Delegates, and the work of the Board of Trustees.

While it is impracticable for the A. M. A. to meet the detailed difficulties of the isolated practitioner, desirable as that might be, this JOURNAL would like to suggest that the larger questions of those policies relating to medicine could be more efficiently dealt with than has been the custom heretofore. Taking the Sheppard-Towner bill as an example, although the organ of the A. M. A. did publish some criticisms of the bill, the complete analyses of all features of this measure appeared much more fully in lay publications, and the attitude of the *Journal of the A. M. A.* did not seem to be so definite as might have been expected. This bill is an illustration of the possibilities inherent in some forms of legislation which may affect public health and the practice of medicine. Other bills and measures affecting medical practice have been advocated in the past which have been important, and more schemes will be presented in the future. The A. M. A. could be made one of the most powerful agencies by and through which legislative bodies could be studied. Our law-makers really desire information relating to benefits and dangers of measures presented as well as to the political effects of their decisions. They are entitled to respect in so far as they are honest servants of the people, but they should not be left without all pertinent information. The A. M. A. could present the highest type of information on all matters relating to public health and the maintenance of efficient medical service.

To this end the A. M. A. should establish a committee composed of representatives from

all the States. This body should be paid a reasonable compensation for time given, and should study proposed legislation, decide upon a course of action and with the dignity and power of the Association behind it, tell Congress what should or should not be done.

There is very little medical organization today outside of scientific societies, but we ought to provide the Government with expert authoritative advice. Until we do this, we should not whine and sulk because the people do not recognize the inestimable value of scientific medicine and the public service of men trained in medicine.

If this course had been pursued we might not now be subject to the humiliating requirements of the Harrison Act. If we had half the organization and determination of labor unions, the unjust tax and restrictions imposed by this law could be modified even at this late day.

THE ADDRESS OF THE DEAN OF THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL.

ON September 27, 1921, Hugh Cabot, then newly appointed Dean of the Medical School of the University of Michigan, spoke to the students and professors of the school on "Some Problems in Medical Education as they Concern the University of Michigan."

Dr. Cabot began his address by referring to the Medical School as a monument to the foresight and ability of its former Dean, Dr. Victor Vaughan. He then discussed the teaching policy of the school in its three great divisions: (1) the teaching of undergraduates; (2) the teaching of graduate physicians and the advancement of the boundaries of medical knowledge; (3) the teaching of the public in matters of public health and health policy, and assisting in working out the relation of physicians and hospitals to the people of the State.

Dr. Cabot, in his discussion of the teaching of undergraduates, dealt entirely with the question of full-time *vs.* part-time instruction. He pointed out that there has been a failure to draw a distinction between the application of the principle of full-time teaching to medical schools situated in large cities, and to those in small cities. Part-time teaching is particularly unsatisfactory, he believes, in the latter. He insists that intructors must be men of experience, both in the science and in the art of medicine, and says that the greatest obstacle in obtaining such men is financial. This difficulty can be overcome, at least in part, by utilizing the legitimate income of the hospital.

In discussing the relation of the medical school to the public health, Dr. Cabot states his belief that no new departure in the form of "State medicine" can be successful which takes from the patient his right to choose his own doctor, or which will result in a deterioration of the standing of the medical profession in the community.

PSYCHOANALYSIS.

To writers of papers for medical journals the contribution by Dr. J. F. W. Meagher should be of interest because of the precision in his statements, careful résumé and theory of Psychoanalysis. There is value in a dispassionate and concise presentation of a writer's work when it conveys information which can be easily acquired.

The subject matter should interest the general reader although the quality of the conclusions and implied advice can best be estimated by experts.

NEWS ITEMS.

GIFT TO ESTABLISH CANCER FIELD SERVICE.—At the annual meeting of the American Society for the Control of Cancer, held in New York on February 24, announcement was made of a grant of $26,750 by the Commonwealth Fund of New York City to establish a field service in this country and Canada, to spread information regarding cancer.—*New York Medical Journal.*

APPOINTMENTS TO THE MEDICAL FACULTY OF COLUMBIA UNIVERSITY.—Dr. Horatio B. Williams has been appointed Dalton professor of physiology in the School of Medicine, Columbia University. Dr. Williams has been chairman of the National Research Council Committee on Research Methods and Technic in Physics since 1920. Dr. Walter W. Palmer, Bard professor of the practice of medicine, has been made a member of the Administrative Board of the Institute of Cancer Research, to serve until June 30, 1924.—*New York Medical Journal.*

QUACKERY IN GERMANY.—According to the Berlin correspondent of the *New York Herald*, quack physicians are over-running Germany and qualified doctors are demanding that the activities of these quacks be stopped by legislation. It is pointed out that during the period in which Germany's population increased by six per cent. the quacks increased 600 per cent. The correspondent says statistics just published show that there are more than 36,000 physicians in unoccupied Germany, against something more than 34,000 in all Germany in 1913, at which time there were about five physicians to every 10,000 inhabitants; now there are six.

The number of women physicians, he says, has doubled in eight years.—*New York Medical Journal.*

Dr. Fish Pleads Nolo and Pays Fine of $25.—Boston, March 14.—Dr. Ralph C. Fish of Worcester, who was indicted last fall on a charge of selling 62 grains of morphine between July, 1918, and September, 1921, pleaded nolo today in Central Court and was fined $25 by Judge Morris. It was alleged that Dr. Fish failed to keep a record of his sales as required by law.—*Worcester Telegram.*

The next meeting of the Advisory Health Council of the New England Division of the American Red Cross will be held May 22 instead of May 17, as previously announced.

A demonstration clinical meeting was held at the Beverly Hospital Tuesday, March 21, at 4 p. m. Interesting cases were shown and discussion followed.

Banquet to Chicago's Retiring Health Commissioner.—On Monday, March 6, a banquet was tendered to Dr. John Dill Robinson, Commissioner of Health of Chicago, by the employees of the department. There was a reception previous to the banquet, which was attended by over 1000 persons. Dr. Robinson is succeeded by Dr. Herman N. Bundesen.

The Dorchester Medical Society.—A meeting of the Dorchester Medical Society was held at the Municipal Building, Columbia Road, Dorchester, on Wednesday, March 15. Dr. William C. Emery presided. A large number of members attended.

Dr. Miner H. A. Evans read a paper on the "Mental Attitudes of the Neurotic Patient." Only those cases of neurosis were included that were not due to toxins or physical disorders. He described the reasoning of the neurotic patients, their attitude toward themselves, their families and the doctor. He also discussed the usual attitude of the family and the doctor to the patient.

Dr. Evans then went into detail concerning the treatment, and very entertainingly showed why the "doctors of other cults" had such success with this type of patient. He showed how to keep the confidence of the neurotic and how to secure a cure, almost without their knowledge of the method used.

Many relevant questions were answered by Dr. Evans, and the evening ended with the usual collation.

Joseph I. Grover, M.D.

The Washington Public Health Conference.—Last week a conference under the auspices of the United States Public Health Service was held in Washington. Representatives of schools of public health, medical schools and men actively engaged in public health work attended. The subjects for consideration were: "The Future of Public Health in the United States" and "The Education of Sanitarians."

The names of the following Massachusetts men appeared on the program: Dr. Eugene R. Kelley, Dr. David L. Edsall, Dr. Milton J. Rosenau and Professor George C. Whipple.

The addresses will be printed and can be read.

United Hospital Fund of New York, Hospital Information Bureau, 15 West 43rd Street.—Following the survey of hospital work in New York City made by the Public Health Committee of the New York Academy of Medicine and the disclosed need of a central agency of information about hospitals, the United Hospital Fund organized such a Bureau, with offices at 15 West 43rd Street. The aims of this Bureau are to keep in touch with hospital work and progress in New York City; to furnish information to all interested with regard to administration, record-keeping and other facts concerning hospital work, organization and facilities; to study and make known the hospital needs of the city; to prepare exhibits; to maintain a library of hospital reports and statistics, also of record forms and blanks used in the several departments of the hospitals; to publish annually, or more often, information concerning hospitals; to promote uniformity in hospital reporting; and, whenever called upon by the hospitals, to assist in such administrative and efficiency studies as would be of value to the hospitals, municipal and private. The committee in charge of the Bureau is as follows: Mr. Francis Smyth, chairman, trustee of the United Hospital Fund; Dr. W. Gilman Thompson, president of the Reconstruction Hospital and trustee of the New York Academy of Medicine; Dr. S. S. Goldwater, trustee of the United Hospital Fund, director of Mt. Sinai Hospital, formerly Commissioner of Health; Mr. Julius A. Stursberg, trustee of the United Hospital Fund and also of the Lenox Hill Hospital; Mr. Henry C. Wright, hospital consultant and trustee of Bellevue and allied hospitals. Dr. E. H. Lewinski-Corwin, executive secretary of the Public Health Committee of the New York Academy of Medicine, has been appointed director of the Bureau.

For week ending March 18, the number of deaths reported in Boston was 302, against 233 last year, with a rate of 20.61. There were 55 deaths under one year of age, against 36 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 55;

measles, 125; whooping-cough, 6; tuberculosis, 57. Included in the above were the following cases of non-residents: Diphtheria, 1; scarlet fever, 5; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 1; scarlet fever, 1; whooping-cough, 2; tuberculosis, 14. Included in the above were the following cases of non-residents: Tuberculosis, 2.

HAMPSHIRE DISTRICT MEDICAL SOCIETY.—The last regular meeting was held at Boyden's Restaurant, Northampton. Dr. W. O. Wilder of Springfield gave a lecture on "Vesical Obstructions Other Than Those Caused by Neoplasms of the Prostate," illustrated by lantern slides. Dinner was served after the meeting.

The Northampton Board of Health clinic for the immunization of children against diphtheria by inoculations with toxin-antitoxin is in successful operation twice a week, under the direction of Dr. J. G. Hanson, School Physician. Approximately 4000 children have been treated, which represents a greater part of the school population of Northampton.

CANCER.—Morley Roberts, of London, suggests that the final cause of cancer may consist in some failure of constant stimulation by the anterior pituitary in subjects exposed to perpetual irritations, while sarcoma may be due to anterior dyspituitarism.

THE ETHER CONTROVERSY.—*The Southern Medical Journal* has recently published an article in which the contention is made that William T. G. Morton was not the discoverer of ether narcosis, and that through discreditable methods he secured the recognition which should have been given to Crawford W. Long. The suggestion is made that those in charge of the Hall of Fame should review all the evidence and right an alleged wrong.

The Kentucky Medical Journal prints the article also.

The present generation has very little knowledge of the bitter controversy waged over the claims of Morton, Jackson, Wells, and Long. The contention is founded on the claim that Long removed a tumor from the neck of James Venable while Venable was under the influence of ether, in 1842, as well as operations on several other patients. However that may be, the glory can never be taken from the Massachusetts General Hospital, for the use of ether was endorsed by the staff of that hospital, and thus became recognized by the profession.

THE THORNDIKE MEMORIAL LABORATORY.—This building is now being erected on the grounds of the Boston City Hospital, and will be completed this year. Dr. Francis Weld Peabody has been appointed director of this laboratory, which will be devoted mainly to research work.

THE BRITISH MEDICAL RESEARCH COUNCIL reports that because of the reduction of its resources, prosecution of researches relating to the advancement of preventive or curative medicine will have to be curtailed. It was expected that the activities of this council would have developed valuable knowledge relating to the cure and prevention of many diseases.

WORCESTER DISTRICT MEDICAL SOCIETY.

THE regular meeting of the Worcester District Medical Society was held Wednesday, March 8, at 8.15 P. M., in the University Club rooms, 377 Main Street, Worcester, Mass.

The program was as follows:

"Epidermophytosis," by Dr. Charles J. White of Boston.

"The Laboratory Investigation of Epidermophytosis," by Dr. Arthur W. Greenwood of Boston.

"The Late Syphilitic and Therapeutic Problems," by Dr. George A. Dix of Worcester.

After the meeting refreshments were served by the medical members of the University Club.

Owing to the fact that it was hard to hear the papers as read, a synopsis of the clinical papers by Dr. White and Dr. Dix is given below at some length.

EPIDERMOPHYTOSIS.

BY CHARLES J. WHITE, M.D.

WHAT is now spoken of as epidermophytosis has been described in parts and under various names since the days of Hebra. In 1907 Sabaraud separated the causative fungus from the tricophyton. But we now know that more than one organism is responsible for the disease. We also know that it has several distinct clinical manifestations, and affects many parts of the body. Recent investigation is showing their relationship.

The macular type is most often seen on the upper, inner surface of the thighs, where it has long been known as eczema marginatum, or red flap. It occurs more often in the male, extending from the top of the thigh down to the level of the relaxed scrotum in the form of a semicircle. But it may extend by new foci even down to the knee. It is brick red in color, little if at all elevated, often with delicate

scaling, and seldom shows any tendency to central clearing. Overstimulation may alter its appearance. It may extend back along the perineum and into the intergluteal fold, as well as the lateral ones, involve the genitals or invade the pubes. But it shows little or no tendency to spread anteriorly on the thigh. On the scrotum it may produce a raw condition and large, dome-shaped, dull red papules. It never involves the hair. When in the axillae, it is much more inflammatory and its lesions more elevated. It may occur on any of the plane surfaces of the body.

The vesicular type occurs on the hands and feet, particularly the palms, soles and lateral surfaces of the fingers, which are often its starting point. The vesicles are deep, grayish in color, often with a central bluish spot. They are seldom inflammatory. Rarely a superficial inflammatory type is seen. In drying they may leave collarettes, or the whole surface may become exfoliative. On the soles, especially, clusters in the arch may become purulent, and be hard to distinguish from infectious eczematoid dermatitis. Hyperhidrosis is often a symptom of the vesicular type.

The macerated type occurs in the folds where apposing surfaces meet. It is best seen between the toes, particularly the fourth and fifth, where the skin takes on a sodden, parboiled appearance over an underlying reddish surface. Often one finds a peculiar lardaceous plug buried in the web. This is of great value in diagnosis. This condition seldom causes noticeable odor or inflammation. It is often seen in the intergluteal fold, and occasionally in others.

The hypertrophic type is probably a secondary manifestation, one form of which occurs diffusely on the palms and soles, and leads to some trouble in diagnosis. Another form is seen on the soles as well-defined, translucent, orange-yellow calluses occurring on points of pressure. Rarely one sees areas of typical lichenification associated with characteristic patches of the disease elsewhere. Recently attention has been sharply drawn to the occurrence of a complicating tricophytid.

The whole story of its etiology is not known. The use of dirty clothes, particularly woolen articles, which cannot be boiled; athletic clothes, which are neglected and worn only occasionally, are certainly a factor, as is the use of certain leather articles. The modern laundry appears to play a part.

No one treatment meets all the requirements. Ointments do best in the macular type, but no one is wholly satisfactory. Potass. permanganate sol. 1:5000 or aq. sol. sat. of picric acid seems to do well in the vesicular type. Sterilization of clothing is very important. It rarely passes from one member of a family to another.

THE LATE SYPHILITIC AS A THERAPEUTIC PROBLEM.

By George A. Dix, M.D.

The groundwork of late syphilis is laid very early in the disease, so that treatment at that time must be so directed that if it fails of complete cure, it will help build up his resistance against the disease in its later stages. When the disease appears in otherwise healthy young persons, arsphenamine is the drug of choice, and it can generally be used promptly and intensively, with the necessary adjustment to individual requirements. But its injudicious use at this time may endanger the patient's future by preventing or altering his natural resistance, which should be his greatest protection in late syphilis.

But an early case in a subnormal or diseased patient theoretically belongs with the late type; but practically he is a poorer therapeutic risk, because his physical infirmities are of nonspecific origin, and so more apt to react unfavorably to specific treatment.

But the late case presents a different therapeutic problem. We can no longer entertain the same hope of complete cure. We are now less concerned with the disease as a whole as with its effect on the structures whose functional integrity is necessary to life and the problem of living. We should try to gauge as accurately as possible what the insurance people call his expectation of life, and try to estimate what measures will do most to help him realize it. Such appraisal of his physical condition calls for a complete and searching physical examination. In this we often need the help of our colleagues in other special fields of medicine.

When we have defined his margin of safety as well as we can, it is important to try to adjust our treatment to a workable basis which will strike a balance between his physical handicaps and his therapeutic needs.

Generally both arsphenamine and mercury are necessary, but arsphenamine should seldom be used with anything like the intensity that it is earlier. There are few cases in which a preparatory course of mercury or mixed treatment is not good treatment, its duration to be governed by the importance of the involved organ, the degree of activity and the damage done. When arsphenamine is started, the size of the dose and frequency of injection should conform to our estimate of his tolerance, and the mercurial intervals lengthened. He probably needs about the same amount as the early case, but extended over a longer period, and in more moderate dosage. It is necessary to respect his tolerance because he may need treatment for the remainder of his life.

His resistance is now the chief consideration,

and he needs the benefit of every collateral expedient to promote it, and the removal, if possible, of every complication which might serve to retard progress. Such serious accidents as the Herxheimer reaction and exfoliative dermatitis must be kept in mind and guarded against. The liver and kidneys need particular and constant attention.

It is often hard to know when to stop treatment and rely on observation and regulation of habits, which perhaps, after all, play the chief rôle in the solution of the problem. The relief of symptoms is now much more important than earlier, and is often a better guide to the effect of our treatment than is the temporary reversal of the Wasserman reaction. His future is perhaps safer if, like the tuberculous patient, he be advised in terms of arrest, of readjustment of habits to capacity, of the need of frequent examinations and of possible relapses.

Miscellany.

LABORATORY WORKERS CONTRACT TULARAEMIA.

All six of the laboratory workers of the United States Public Health Service who have been studying tularaemia, a disabling sickness of man which has been known, particularly in Utah, for the last five years, have contracted the disease, two of them being infected in the laboratory in Utah and the other four in the Hygienic Laboratory in Washington. Such a record of morbidity among investigators of a disease is probably unique in the history of experimental medicine.

Two of these workers are physicians, one is a highly trained scientist, and the others are experienced laboratory assistants. One of them contracted the disease twice, once in the laboratory in Utah and again, two years and five months later, in the laboratory in Washington.

In these workers the disease began with a high fever, lasting about three weeks, and was followed by two months of convalescence. The disease has few fatalities, its chief interest arising from the long period of illness which it causes in midsummer, when the farmers of Utah are busily engaged in cutting alfalfa and plowing sugar beets.

The studies into the cause and transmission of the disease show it to be due to a germ, *Bacterium tularense*, which is conveyed by six different insects: the blood-sucking fly, *Chrysops distalis*; the stable fly, *Stomoxys calcitrans*; the bedbug, *Cimex lectularius;* the squirrel flea, *Ceratophyllus acutus;* the rabbit louse, *Haemodipsus ventricosus;* and the mouse louse, *Polyplax serratus.* Only the first four of these are known to bite man. It appears possible that the germ may also enter through unbroken skin; for instance, that of the hands.—*United States Public Health Service.*

Mr. Editor:

I have your letter in regard to B. tularense infection. B. tularense was isolated by McCoy from ground squirrels in California some years ago. In these animals it produces a plague-like disease. More recently, in Utah, there has been a disease of man prevalent in certain rural districts. This disease is characterized by fever lasting for several weeks and by swelling of the lymph glands in the neighborhood of the bite of the deer-fly. It is believed that the infection results from the bite of these flies.

In the Public Health Reports, Vol. 34, No. 37, September 12, 1919, Dr. Edward Francis reports animal inoculations made from a case of deer-fly fever. As a result of these inoculations he obtained an organism which he believed to be identical with the B. tularense of McCoy. Consequently, it is supposed that deer-fly fever is caused by B. tularense, and it seems probable that it is transmitted by one of the biting flies of the neighborhood. I have not heard of any cases of deer-fly fever occurring outside of Utah, except among laboratory workers studying the disease. The recent issue of the Health News of the Public Health Service reports a number of cases of infection in laboratory workers, and says that recent work seems to show that the disease can be transmitted by a variety of biting insects, including the stable fly, the bed bug, the squirrel flea, and the lice of rabbits and mice.

Yours very truly,

E. C. SHATTUCK,
Assistant Professor of Tropical Medicine.

DR. B. P. CROFT OF GREENFIELD REFUTES STATEMENT IN LOCAL PAPER.

IN the issue of February 25, 1922, the *Gazette and Courier* of Greenfield published an editorial compliment of osteopathy, and suggesting, by inference, recognition of chiropractic. Dr. B. P. Croft of Greenfield wrote a letter which appeared March 11, 1922, in the same paper, in which he resents the slurring reflection on physicians who have tried to inform legislators relating to proposed laws which, if enacted, would legalize chiropractic methods. His letter is vigorous and logical, and should have influence with representatives and senators from that part of the State. It is refreshing to find physicians taking active interest in legislative matters.

RÉSUMÉ OF COMMUNICABLE DISEASES FOR MASSACHUSETTS.

FEBRUARY, 1922.

General Prevalence.

There were 12,786 cases of communicable diseases reported for this month as compared with

6,735 cases reported for January. This increase over the number of cases reported last month was due to increased prevalence of measles, influenza, and lobar pneumonia.

Chicken-pox. There were 624 cases of this disease reported for the month. This is less by 200 cases than the total for January.

Diphtheria also showed a lessened incidence, with 790 cases reported, as compared with 911 for last month.

Dog-bite, requiring anti-rabic treatment, decreased to 10 cases for this month.

Encephalitis Lethargica. There were six cases reported for the month.

Epidemic Cerebrospinal Meningitis was reported in eight instances.

German Measles. The reported incidence for the month was 45 cases.

Gonorrhea and Syphilis. Both diseases showed substantial decreases in the reported incidences; totals for the month were 315 for the former and 152 for the latter.

Influenza increased from 135 cases for January to 5,222 cases for this month. This increase in the number of cases was made up by the increased prevalence of this disease in the eastern and central parts of the State. The Connecticut Valley and Berkshire districts escaped almost entirely. The type of influenza as seen this year has been mild in character.

Measles increased from 1,275 cases for January, to 2,062 for this month. The total for February, 1921, was 2,325 cases.

Pneumonia, Lobar, increased from 575 cases for January to 987 cases for this month. This increase has, as in influenza, been made up by reports from eastern and central cities and towns.

Scarlet Fever was reported in about the same number as last month. The total for the month was 951 cases.

Tuberculosis, Pulmonary, was reported in about the usual number, with the reported incidence of 515 cases.

Tuberculosis, other forms, was reported in 64 instances.

Typhoid Fever was reported 31 times. The 31 cases represent 18 scattered cases, and 13 cases in an institution for children.

Whooping-cough. There were 391 cases reported for this month. Total for January was 326.

RARE DISEASES.

Actinomycosis was reported from Brockton, 1.

Anterior Poliomyelitis was reported from Boston, 1; Quincy, 1; Worcester, 2. Total, 4.

Dog-bite, requiring anti-rabic treatment, was reported from Belmont, 2; Billerica, 1; Holyoke, 3; Lexington, 1; Lowell, 4. Total, 11.

Dysentery was reported from Boston, 1.

Encephalitis Lethargica was reported from Boston, 2; Cambridge, 1; Fall River, 1; Framingham, 1; W. Boylston, 1. Total, 6.

Epidemic Cerebrospinal Meningitis was reported from Belmont, 1; Boston, 1; Falmouth, 1; Holyoke, 1; Leominster, 1; Swampscott, 1; Worcester, 2. Total, 8.

Malaria was reported from Cambridge, 1; Westfield, 1. Total, 2.

Septic Sore Throat was reported from Amherst, 2; Andover, 1; Boston, 4; Clinton, 1; Haverhill, 1; Leominster, 2; Northampton, 1; Sharon, 1; Weston, 1. Total, 14.

Tetanus was reported from Boston, 1; Peabody, 1; Upton, 1. Total, 3.

Trachoma was reported from Boston, 2; Brockton, 1; Cambridge, 2; Norwood, 1. Total, 6.

Trichinosis was reported from Boston, 5; Stoughton, 1. Total, 6.

RABIES.

THE following illustrates the pernicious activity of ignorant people. This letter was sent to the parents of a child bitten by a rabid animal:

"Boston, Feb. 25, 1922.

"*Dear Madam:*—

"Take the advice of a well-wisher, who writes you simply from humanitarian reasons. Do NOT allow your child, who was recently bitten, to be subjected to the terrible dangers of the Pasteur treatment.

"I have made a study of medical matters and have looked into the records of the Pasteur Institute, and Know that their so-called 'successes' in cases of dog-bite are, in reality, a record of dismal failure, attended in almost every case by terrible results to the victims (*i.e.*, the patients).

"Instead of taking such a risk, give the child a safe, wholesome treatment, which you can probably apply yourself,—a very thorough perspiration, or sweat. This should be repeated a few times. The idea is to make it so thorough as to take all the poison out of the blood. This is no mere theory; it has been well tested, and even in cases where the disease had actually developed, has cured the patient completely.

"Use whatever method you please for inducing the perspiration, only be sure it is thorough. Give plenty of water to drink, but *not* from a glass dish of any kind. Lobelia tea is good. This is not a patent medicine, but just a dried plant, or herb,—an old, staple, home remedy, which any druggist should keep. But if you cannot get it, it is not essential. If it can be avoided, do not leave the patient alone during sweating process. Some people use the

vapor bath cabinet to induce a free perspiration, but though this is good, it is not always safe, as the patient's heart may not be in perfect condition—and of this you cannot always be sure. The majority of people could take vapor baths with safety, but some people cannot. A person should never be left alone when in a bath cabinet.

"If your doctor is sensible enough to be willing to help you with this mode of treatment, so much the better. If not, and you have never had experience in giving sweats, better get some friend who has had, or a good nurse (preferably trained) to help you. (There are many doctors who, for various reasons, will not advise the sensible and wholesome thing, even though they may know it is the best, especially if there is more money in the other.)

"A thorough and free perspiration, carefully given, is the best method there is for driving poisons out of the system.

"Yours truly,

"GOOD HEALTH."

Obituary.

JAMES WOODS BABCOCK, M.D.

Dr. James Woods Babcock, a former fellow of the Massachusetts Medical Society, one who received his medical education in this State, died at Columbia, S. C., March 3, 1922.

Dr. Babcock was born in Chester, S. C., August 11, 1856, and therefore was 65 years old at the time of his death. He was graduated from Harvard College in 1882, entered Harvard Medical School and served as house officer at the McLean Asylum, then in Somerville. On receiving his M.D. in 1886 he became assistant physician at the McLean Asylum; joined the State medical society, and remained at the asylum until 1891, when he removed to his native city to specialize in mental diseases. He was superintendent and physician to the South Carolina Hospital for the Insane (1891-1914), chairman of the Columbia water and sewer commissions and a member of the Columbia board of health. At one time he was a member of the South Carolina Legislature. In 1905 he received the degree of LL.D. from South Carolina College.

Among his writings may be mentioned "Tuberculosis and Insanity," contributed to the *American Journal of Insanity;* "The Colored Insane," in the *Alienist and Neurologist;* "Development of Charities in South Carolina," in the *News and Courier*, Charleston.

Dr. Babcock was one of the first physicians in the South to recognize pellagra (1907), and was president of the National Association for the Study of Pellagra from 1909 to 1912. From 1915 to his death he was professor of psychiatry in the Medical College of South Carolina. With C. H. Lavinder, M.D., of the United States Public Health Service, he published in 1910 the first treatise on pellagra in the English language.

In 1892 he married Katharine Guion of Lincolnton, N. C., who with several daughters survives him.

Correspondence.

THE SCHICK TEST.

Mr. Editor:

The value of the Schick test has been definitely established as an important means of controlling diphtheria. By means of this test every person who is susceptible can be recognized. It is not curative, but is a means to separate the susceptible from the immune, and also of valuable aid in the diagnosis and differential diagnosis of questionable cases. In conjunction with this test, a passive immunity may be established by the use of toxin-antitoxin.

A series of 438 Schick tests was done in the Worcester State Hospital. The object of this series was solely to observe the reaction of the toxin upon adult individuals, on an experimental basis. The results obtained depend entirely upon a standard toxin, careful technic in the injection of this toxin and an accurate observation of all phenomena. The ages of those tested ranged from 20 to 60 years. In almost 66 per cent. the reaction was negative, while in 34 per cent. the reaction was decidedly positive. It was most interesting to note that the greater percentage of negative reactions were in those of more advanced years. Those past 40 years were almost 90 per cent. negative, thus showing that the older individuals have a natural immunity; that is, they have the equivalent of 1/30 minimal lethal dose of anti-toxin, which dose kills a 250-gram guinea pig in four hours. This is the nominal amount to withstand and counteract the activity of diphtheria toxin.

Three of our employees were taken sick with laryngitis. The test was done on them and a positive reaction was observed on all. Cultures and bacteriological examinations showed a presence of diphtheria bacilli. These cases were treated immediately with the ordinary diphtheria antitoxin. They all recovered promptly.

The Schick material used in this series was furnished by the State laboratories.

In preparing the toxin for use, all rules of ordinary asepsis were carried out. The capillary tubes were carefully handled. A small sterilized file was used to file the end of the tube. The broken end was carefully pushed through the neck of the rubber bulb until it punctured the diaphragm within to enter the cavity of the bulb; then the other end of the tube was broken. Carefully holding the bulb between the thumb and middle finger, the index finger was placed on the opening at the large end of the bulb and the toxin was expelled into 10 c.c. of saline. The bottle was then corked and shaken vigorously to dilute the toxin. The same technic was used for preparing the solution to be used as heated toxin. This heated toxin was prepared by heating to 75 degrees Centigrade for 15 minutes.

Great care must be taken to inject the test fluid intradermally and not subcutaneously. To perform this test accurately .1 c.c. of the unheated toxin,

properly diluted, was injected on the flexor surface of the right forearm; the dilution used so that 1/50 of a M.L.D. for 250-gram guinea pig was contained in .1 c.c sterile saline solution. A like dosage of the heated toxin, properly diluted, was injected on the flexor surface of the left forearm for a control.

The positive reactions were accurately noted, at the site of injection, to appear in from 18 to 48 hours. A definitely defined circumscribed area appears at the point of injection about 3 to 5 times the size of the original. The circumscribed area or spot reaches its maximum redness in the second, and as late as the third day in a few instances. It becomes entirely faded out in almost a week or ten days, and in most cases leaves a pigmented or brownish area, which begins to show some desquamation.

In the pseudo-reaction, it was noted that the small circumscribed redness appeared on the right arm in from eight to twelve hours, not as intense in its redness as in the positive reaction, but its maximum intensity being reached in about 12 to 15 hours, and then fading away from 24 to 36 hours, leaving no pigmentation or desquamation.

The pseudo-negative reaction, spoken of by Abraham Zingher, was also noted in 71 of the cases tested. The circumscribed redness appeared on the right arm, being fairly well marked in from 15 to 18 hours, and its maximal intensity seems to be in 20 to 24 hours. The left arm also shows a reaction similar to that of the right, thus bearing out that heating destroys the toxin but not the autolysed toxin. The pseudo-negative reaction is due to the autolytic enzyme of the diphtheria bacillus, which is also present in the test fluid.

FRANKLIN P. BOUSQUET, M.D.

MEDICAL LIBERTY LEAGUE, INC.

Mr. Editor:

My attention has been called to an article in your paper of March 9, 1922, headed: "The Methods of the Medical Liberty League."

If the circular you quote has been distributed among the members of the Legislature, it has not been so distributed by this League. We know nothing of any such circular and entirely disavow it.

I do not know how you came to ascribe the article in question to the Medical Liberty League, but I feel assured that you will take pleasure in correcting the mistake. It may be that the words "Medical Liberty League" form a part of the title of some other organization, but inasmuch as this League is incorporated under Massachusetts laws as Medical Liberty League, Inc., it would be the natural assumption of your readers that your headline referred to us.

Very truly yours,

HENRY D. NUNN,
Manager, Medical Liberty League, Inc.

THE VOTE ON DR. HUTTON'S PROPOSITION.

SHELBURNE FALLS, MASS., March 13, 1922.

Mr. Editor:

In the correspondence column of the JOURNAL, dated January 5th, I proposed that names be sent to me, in the way of a vote, with the view of organizing a separate society to look after legislation and the financial and general welfare of ourselves. It may be of interest to some of the readers of the column to know what the result of that vote was.

Briefly, the vote was not overwhelming. It was, nevertheless, generous—in fact, too large for me to answer each one individually, both on account of the time and expense, all of which I would have had to bear myself, so I want to take this opportunity to thank those who answered.

I was afraid when I made the proposal that the vote would strongly be predominated by the younger practitioners, who were struggling against adverse conditions peculiar to starting in practice, but I must say that the actual vote did not appear to be that way.

I realized that the personal element would enter largely into the matter, and no doubt it did. I know of many, from reports, that had in mind that every movement should originate from someone holding some responsible position in the Medical Society, and that nothing could come, or had the right to come, from any other quarter, and that the under-fellow was presumptuous indeed if he suggested anything new or tending to protect himself, the public, or his fellows.

Let me say, without digressing further, that so far as I can determine, that the vote was strongly favored by especially the middle-aged and the older practitioners.

Prominent men, faculty staff, older active practitioners, retired men, middle-aged, and younger, expressed their views in favor of such an organization. That is the way the thing has gone so far.

Many have said to me: "Doctor, what is the use of trying to do anything? Nothing has ever been accomplished before. It is impossible to get enough together to do anything. There is too much pulling and yanking this way and that way. The thing will flash up and die down and nothing accomplished—and what is the use?"

I do not altogether agree with that, however. I maintain that all we need is a personality with sufficient pep, and a well determined policy, open and above-board, and that we can put it over.

My own personal views are that we all, every one of us, have things that we would like most dearly to see remedied; that five thousand and plus physicians, united, would be a world-power for good. I think it should be emphasized that anyone joining this society should go in with their eyes wide open to the fact that it is not going to be any child's play.

I further believe that this power should first be placed solidly behind the State Medical Society, so far as they want to take the lead; that there should be no conflict of interests.

I furthermore fully believe that with such a solid backing behind them, or behind the organization, that more could be accomplished in six months than has ever been accomplished before in a similar number of years.

I furthermore believe that an organization of this nature should not be permanent. One good year's existence would straighten things out emphatically. I am not in favor of any organization that would lapse into a condition where the secretary would be crowned for life, and hold by divine right. The same applies to other officers. Office should be held just so long as results are being gained, and no longer.

I would like to get your vote, Mr. Editor. I understand you are personally in favor.

The committee on legislation has been constantly asking for unity behind them; they have been working hard under great difficulties. Now let us get behind them for a while, full force, give them strength and give them something new to think about and work for, and let us see just what can be accomplished in a short, sweet time.

Fraternally yours,

W. A. HUTTON.

REGISTRY OF BONE SARCOMA.

227 Beacon Street,
BOSTON, MASS., February 27, 1922.

Mr. Editor:

I wonder if the result of my letter in your issue of February 2nd would interest your readers? My letter was intended to enable the Registry of Bone

Sarcoma to find out how many cases of Bone Sarcoma were known to be living in Massachusetts, whether cured, under treatment, or moribund. It suggested that if every one of the 5494 physicians in this State would drop me a postal stating whether or not he knew of a case, we should have at once the best statistics ever obtained on the frequency of this disease.

In reply I have had, up to date, *only seventeen negative and two positive answers.* Is this because your Journal is not read or because of the indifference of the medical profession as to whether the frequency of bone sarcoma is known or not?

Perhaps your readers may be interested in the human nature problem involved, even if they are indifferent as regards the advance of medical science. Your editorial board may also be interested to know what proportion of your 3546 subscribers in Massachusetts read the Journal thoroughly. I therefore enclose a diagram which aims to analyze the problem.

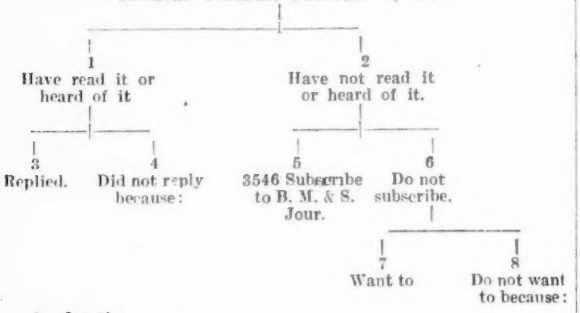
If you are interested enough to publish this letter and diagram in three successive issues, I will undertake to send a return postal to every physician listed, as living in Massachusetts, in the Directory of the American Medical Association, who has not dropped me a postal a week after the third issue. On one-half of the postal I will have this diagram printed: the other half will have the return address to me. Eventually you can publish the diagram with the numbers following each heading. This will give the facts to the few interested in bone sarcoma and the many interested in the *Boston Medical & Surgical Journal*, and in the psychology of the medical profession.

Sincerely,

E. A. CODMAN, M.D.

5495 PHYSICIANS IN MASSACHUSETTS.

LETTER ON REGISTRY OF BONE SARCOMA IN BOSTON MEDICAL & SURGICAL JOURNAL, FEBRUARY 2, 1922.



9. Inertia.
10. Procrastination.
11. Disapproval.
12. Oppose.
13. Not interested.
14. Specialist.
15. Retired.
16. Economy.
17. Personal
18. Other Reasons.

Please reply to this by consecutive numbers, e.g., 1—4—15 means "I have read or heard of the Registry and did not reply because I have retired from practice"; 2—6—8—16 means "I have not read nor heard about the Registry of Bone Sarcoma and do not subscribe to the *Boston Medical and Surgical Journal* from motives of economy."

[NOTE.—Dr. Codman states that he has received forty reports since the publication of his first letter —one positive and thirty-nine negative. The profession is urged to assist in the compilation of facts asked for.—Editor.]

THE BUSINESS SIDE OF X-RAY DIAGNOSIS AND TREATMENT.

Mr. Editor:

In a recent issue of the *Medical Review of Reviews*, Dr. Soiland discussed the business side of radium treatment. May I, for the benefit of the radiologist and of the physician, discuss the business side of x-ray diagnosis and treatment?

It seems, somehow, utterly impossible to convince the average patient—not to speak of the average doctor—that the average fees charged by most radiologists are not only reasonable, but extremely moderate. During the six years that I have specialized in radiology it seems that scarcely a week has gone by that I have not been called upon to explain, either to some irate patient or to some doctor, why the bill for some x-ray examination or treatment was not excessive. Many of these bills either have not been paid at all, or I have had to more or less gracefully reduce my original fee. My original fee has never yet, to my mind, been excessive. This needless and irritating bickering about x-ray fees happens not only in my office and private patient work, but in the hospitals where I am radiologist. Every radiologist, even the best known, seems to have the same trouble.

It has seemed to me many times that, perhaps, if the facts about x-ray work, the expenses and hazards connected with it, were fully explained, doctors in general might understand that our fees are just, and would be in a position to explain to their patients the exact situation. Patients are not paying a radiologist for pictures or plates; they are paying a consultant for an expert opinion or diagnosis.

We are considering the problem as it concerns the radiologist, that is, the accredited, ethical physician who has made a special study of radiology, and who devotes himself exclusively to x-ray diagnosis and treatment. We are not considering the so-called commercial x-ray laboratories—and by commercial x-ray laboratories I mean the x-ray laboratories run by laymen, that have no physician in charge to make diagnoses or to attend to the treatment work. Many so-called commercial laboratories in New York city turn out a vast quantity of x-ray work, charging a very minimum fee, but no diagnosis is sent with the radiographs. Such laboratories, apparently, fill a very definite need in so far as dental radiography is concerned, since many dentists prefer to interpret their own radiographs, and yet do not desire, or are not financially able, to install their own x-ray equipment. The majority of dentists who own their own x-ray machines are no better trained to take radiographs or to interpret them than are these much criticized, so-called commercial laboratories. Yet the average dentist who installs a little dental x-ray machine in his office can get larger fees for his x-ray "pictures" than can the x-ray specialist. Many dentists also take sinus "pictures" and get good fees for such work.

As for the work done by these so-called commercial laboratories, the radiographs are usually very clear and beautiful, and are taken by technicians who have had training and experience under competent radiologists. So long as hospitals, approved by physicians and by the A.M.A., employ men and women who are not physicians and who may not even be nurses, or who have had no medical training or experience whatsoever, to take and interpret radiographs, the commercial laboratory will exist. So long, too, as the average hospital expects a graduate physician who has specialized in x-ray work, to accept and hold a position as radiologist on a small salary basis, without adequate assistance, with limited equipment, and without an appointment on the regular staff of the hospital, the average small hospital of, say, 100 beds, will continue to employ the services of technicians who will make diagnoses or give treatment. Many of these hospitals expect that the physician or surgeon who sends in the case for x-ray will be able to interpret the radiographs, but the physician or surgeon, who has the best interests of his patient at heart, will admit that without special study, which the majority of them have not had, they are absolutely unable to interpret the radiographs and establish even a tentative diagnosis.

But we are not discussing technicians nor commercial laboratories except as a preliminary to the

statement that these are both a cause and a result of the difficulties of the financial side of radiology. To be explicit, technicians and commercial laboratories exist because hospitals underpay their x-ray physicians or insist upon a salary basis, and not a commission basis, of compensation. When a hospital cannot get a physician to accept a position as radiologist because of the small salary, the hospital hires a technician to take charge of the x-ray laboratory. Since technicians are allowed to make diagnoses and to do treatment work within the hospital walls, they rightly argue they can do so outside of hospital walls, and therefore start their laboratories. The average small hospital cannot afford to pay a competent radiologist because the average patient refuses to pay a reasonable fee for x-ray work. This is partly due to the fact that they do not understand the actual expense involved in x-ray work.

This lack of knowledge of the actual expense involved in x-ray diagnosis and treatment is partly due to the fact that our large city and state institutions and large industrial corporations, that have installed x-ray laboratories of their own, have established such small charges or fees for radiographs that an erroneous impression of the actual expense involved is engendered in the minds of the patients and their physicians.

When a city or a state hospital, or a large industrial concern, establishes a fee list ranging from 10 cents to $10 for an x-ray diagnosis, such fees do not cover the actual cost of the work done. Any deficit in such institutions is made up in some other way. Radiologists have figured that, including overhead expenses, light, heat, power, depreciation of equipment, plates, chemicals, etc., the actual cost per plate is from $2 to $3. Of course, the actual cost per plate varies with the number of patients, and the number of plates used per patient. The greater the number of plates taken in a week, a month, or a year, the smaller the actual cost per plate. But when a big industrial plant, which employs over a thousand employees, states that it does x-ray work at cost for its employees and their families, and charges 10 cents for a dental film, takes 8 radiographs for one patient for 75 cents, charges 25 cents for an x-ray of the extremities, and 50 cents for sinus "pictures," it is giving the employees x-rays far below actual cost and ruining the value of an x-ray diagnosis in the mind of the general public.

As Dr. Soiland aptly says, the personal equation should govern each professional contact, but the very nature of our services should demand a fee consistent with its full and intrinsic value.

Kindly and wholesome charity should not be lost sight of, and it is our duty, to the limit of our capacity, to treat all those who seek our help, regardless whether they possess sufficient worldly goods for adequate remuneration; but why should an industrial plant, with such a large number of employees, supply x-rays to their employees and their families at such ridiculously low cost that the fee actually does not cover the cost of the material used? Why, if the fee does not cover the cost, not give the employees the advantage of free x-ray examinations, rather than establish among so large a body of people so erroneous an impression of the cost of x-ray work? Why, above all, should relatives of these employees also get the advantage of these ridiculously low rates? At least such a corporation should, to be fair and square, explicitly explain that the fee charged only partially covers the cost.

A dentist, or a physician, dabbling in x-ray work does not realize the actual expense that a radiologist is confronted with. A radiologist, to do good work, must be prepared to take care of any kind of a case. He must have the best machinery money can buy and the most powerful. He must have extra x-ray tubes (at $125 apiece), good screens, cones, lead shields and protective devices, treatment and other accessories, a Bucky diaphragm and other things too numerous to mention. He must figure that expenses for rent, heat, light, power, chemicals and supplies will cost him probably not less than $300 a month. If he must have an assistant, that is extra expense. He must figure on the expense of building a dark room, of lead lining the walls and the floor, and probably, also, the ceiling of his x-ray room; of installing the plumbing for his developing tanks, and the expense of the installation of the transformer, since it must have a special feed wire. And after the equipment is installed the radiologist is asked to compete wth 10-cent fees for dental radiographs and $10 fees for a complete gastro-intestinal examination. And while a hospital may ethically advertise its consultation, including its x-ray fees, it is still hardly ethical for a radiologist to send out a fee table to physicians or dentists.

If a radiologist may be considered a consultant, how can a doctor or a patient expect a radiologist to make a complete gastro-intestinal examination for a patient, who can afford to pay, in competition with the fees asked at some of our big hospitals and consultation clinics and industrial concerns? Such patients are actually receiving charity, yet would resent any implication that they were receiving charity, because no one has ever proven to them that they are receiving charity. A large percentage of them do not need charity. They are financially able to pay a reasonable fee.

Most physicians who have never done x-ray work do not realize that there is a great deal of time and work spent in establishing an x-ray diagnosis. It is not a simple matter of pressing a button and—presto!—the work is done. Fracture work is simple and easy, but to examine a gall-bladder, a kidney, or a gastro-intestinal tract takes a great deal more time and skill than most people realize. A consultant or an internist has no such great expense to contend with in his average cases, and yet a consultant or an internist is often paid much more than a radiologist. A surgeon's fee, too, is comparatively large when we consider the amount of time, material and skill required. Yet no one begrudges the surgeon his fee.

Most x-ray men are so intensely interested in their work, so zealous in pursuit of knowledge in their daily research work in their laboratories, that they have allowed themselves to be imposed upon when it comes to financial remuneration. They have not voiced their opinions of what they consider adequate compensation. They have been too busy. A day spent with a radiologist who has a hospital appointment would convince the average person that an x-ray specialist's life is a very busy life, filled with a mass of technical details. It is unlike the life of a surgeon or a general practitioner. Few people realize the actual stress and strain of x-ray work or the element of actual danger to the radiologist even today. Several of the most eminent radiologists in the world have died within recent years either from accidental contact with high tension wires or because of the blood-destructive action of the rays or from x-ray burns. All these things entitle the radiologist to far greater compensation than he now grudgingly receives.

Most hospitals and radiologists have established a more or less fixed schedule of fees for x-ray work, but the constant, and unnecessary, and undesirable bickering about the excessive fees has forced many radiologists, even some of our very best men, to often reduce the x-ray fees far below what is a fair and reasonable fee. When an eminent radiologist makes an x-ray examination at a greatly reduced fee, the reports of such reduced fees spread rapidly among patients and doctors. The argument then is, if an eminent radiologist makes x-ray examinations so

cheaply, why should other radiologists charge more? A vicious circle is established, for every patient and every doctor naturally desires the advantages of a minimum x-ray fee, not always because the patient cannot afford to pay more, nor as a concession, or a special favor, but because they feel that an x-ray examination is "not worth any more."

A sliding scale of fees is reasonable and just. The maximum fee that most radiologists ask is seldom—in fact, I think, has never been—excessive. If doctors in general understand the radiologist's work, the expense connected with it, the expenditure of time and energy involved, and the danger the radiologist faces, and explain these facts to their patients, a majority of the unpleasant discontent with the radiologist's fee would cease. The radiologist should never be a piece worker and commercialize his work by charging so much per plate. A true radiologist is a consultant and as such is entitled to a reasonably high fee for his expert knowledge and opinion.

Sincerely,

E. M. SUNDELOF, M.D.,

Radiologist to the Lynn Hospital, and to the N. E. Hospital for Women and Children.

RESEARCH CLUB OF HARVARD MEDICAL SCHOOL.—At the meeting to be held on Friday, March 31st, at 12.30 o'clock, in the Amphitheatre of Building A, Prof. G. H. Parker will talk on: "Certain Aspects of Smooth Muscle Activity."

BOSTON ORTHOPEDIC CLUB.—A special meeting was held in John Ware Hall, Wednesday, March 22, at 8.15 P. M. Subject: "The Second Great Type of Chronic Arthritis," illustrated by stereopticon, by Dr. Leonard W. Ely of Leland Stanford Junior University, San Francisco. Discussion by Drs. E. H. Nichols, R. B. Osgood and F. W. Peabody.

CLINICAL MEETING.—There will be a Clinical Meeting in the Auditorium of the Beth Israel Hospital on Thursday evening, March 30, 1922, at 8.15 P. M. Program: "Certain Aspects in the Diagnosis and Treatment of Blood Diseases," Dr. George Minot. Discussion, Dr. Thomas E. Buckman, Dr. Hyman Morrison. Physicians are cordially invited. The telephone is Roxbury 5940, and visitors may be on call. Refreshments will be served. Committee on Clinical Meetings, Albert Ehrenfried, M.D., Chairman, E. Granville Crabtree, M.D., Secretary.

CLINICAL CONFERENCES AT MEMORIAL HOSPITAL, WORCESTER.—Should sufficient response be received, it is proposed to hold a series of clinics, on Thursday mornings, from 10 to 12, during April and May of this year, at Memorial Hospital. The clinics must, of necessity, consider examples of disease in the hospital at the time, so that no set program can be stated. Even so, the cases are very likely to exemplify problems commonly encountered, and will thus be valuable for study. Neither will there be so many cases that hasty consideration will be encouraged.

It is also proposed to discuss such matter as lends itself to more or less abstract discussion: for instance, the relatively simple method of obtaining a knowledge of renal function. Suggestions of subjects adaptable to similar discussion will be gladly received.

It is in mind to emphasize, during this series, the relationship between "laboratory" findings and clinical phenomena, endeavoring to point out how the information given by the more difficult and expensive laboratory procedures may possibly be obtained by careful clinical observation.

As it is not desirable that more than four should form a group, a greater number tending to lessened opportunity for the members, division of applicants into more than one group may be necessary. Limitation of numbers may also be necessary.

Should interest in the clinics fail for any reason, the series will be closed, although in this regard, suggestions tending to make the work more profitable will always be welcome.

Announcement of the opening of the clinics will be made before April first.

Please send applications to Oliver H. Stansfield, M.D., Memorial Hospital, Worcester, Mass.

AMERICAN PROCTOLOGIC SOCIETY.

PRELIMINARY PROGRAM.

Twenty-third Annual Meeting, St. Louis, Mo., May 22 and 23, 1922. Meeting place and headquarters, Hotel Claridge. The profession is cordially invited to attend the public sessions.

Presidential address: Some Observations, Chiefly Clinical, on Infections of the Rectum and Adjacent Structures, with Special Reference to Pruritus, Granville S. Hanes, Louisville, Ky. 1. Anal Pruritus, Joseph F. Montague, New York, N. Y. 2. A Scalping Operation for Abscesses about the Rectum, Walter A. Fansler, Minneapolis, Minn. 3. Dwight H. Murray: A Tribute, by the Secretary. 4. Office Care of Anorectal Diseases, William M. Beach, Pittsburg, Pa. 5. Foreign Bodies in the Rectum, John D. Stewart, New York, N. Y. 6. Constipation and its Surgical Relations, James C. Minor, Kansas City, Mo. 7. Colostomy Technic, Ralph W. Jackson, Fall River, Mass. 8. The Value of Temporary Colostomy, Louis J. Hirschman, Detroit, Mich. 9. Synergistic Analgesia in Rectal Operations: Case Reports, Joseph F. Saphir, New York, N. Y. 10. An Aseptic Local Anesthesia as Applied to the Anal Region with a Reference to Anesthetic Composition. A Preliminary Report of Sub-mucous Sphinctotomy in the Treatment of Anal Fissure, Edward G. Martin, Detroit, Mich. 11. Case Reports: A Stubborn Case of Pruritus Ani, an Unusual Ischio-rectal Abscess, an Ameba Histolitica Infection, a Seven-inch Sample Wine Bottle in the Rectum, Charles E. Howard, Cincinnati, Ohio. 12. Papilloma of the Rectum: Case Report, Harry B. Adams, Philadelphia, Pa. 13. A Method for Charting Proctologic Cases. Lantern Slides, Collier F. Martin, Philadelphia, Pa. 14. Electrolysis and Ultra-Violet Light in the Treatment of Certain Rectal Affections. Lantern Slides, Horold E. Dunne, Washington, D. C. 15. The Diagnosis of Cancer of the Rectum and Sigmoid. Lantern Slides, Daniel Morton, St. Joseph, Mo. 16. The Cautery in the Treatment of Cancer of the Rectum, William H. Kiger, Los Angeles, Cal. 17 One Real Case of Cure of Cancer with Radium and Operation, Curtis C. Mechling, Pittsburg, Pa.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.—The regular meeting of the Society will be held on Thursday, March 30, 1922, 7.45 P. M., at the Massachusetts General Hospital, Boston. Program: The Value of the Vestibular Tests in Intracranial Surgery, Dr. Wells P. Eagleton, Newark, N. J. Discussion opened by Dr. Harvey Cushing, Boston. Experimental Vestibular Phenomena: (1) Visual Control of Nystagmus, (2) Vestibular Tremors, Dr. C. L. Woolsey, Boston. Discussion by Dr. Harry P. Cahill. Dr. John H. Blodgett, Secretary. Dr. Frank E. Kittredge, President.

TO MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY.

If your annual dues are unpaid, you will not receive the JOURNAL.